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JULY, 1873.

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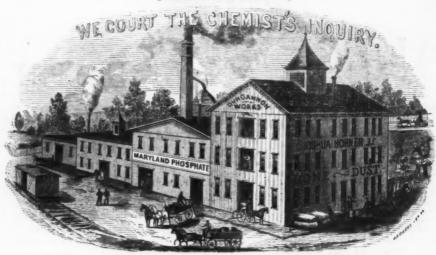
#### TABLE OF CONTENTS:

PROSPRATIC FERTILIZERS241
MR. LAWES ON COMMERCIAL FERTILIZERS 245
SEED DRILLS
VINE CULTURE—WINE MAKING248
GRAPES-EFFECTS OF THE LAST WINTER251
GRAPE GROWING IN VIRGINIA251
WORK FOR THE MONTH252
HARVESTING, 252; CULTIVATION OF
CORN. 252: FALL POTATOES, 252: MIL-
LET AND HUNGARIAN GRASS, 252; SOWED
CORN, 252; RUTA BAGAS, 252; FLAT
TURNIPS, 252: ROOT CROPS, 253: BUCK-
WHEAT, 253; TIMOTHY MEADOWS, 253;
FENCES, 253; LIVE STOCK, 253; PLOUGH-
ING FOR WHEAT, 253; LIME, 253; SU-
PERPHOSPHATE, 254; ASHES, 254.
FEEDING BEES
WHITE CLOVER AS A HONEY PLANT254
OUR MONETARY SYSTEM
TOBACCO CULTURE IN N. ENGLAND, No. 6257
THE NECESSITIES OF THE HOUR
THE APPLICATION OF FERTILIZERS259
FURZE—SILK CULTURE259
THE TARE OR VETCH
DAIRY FARM WANTED
REFUSE OF TANNERIES
AMERICAN POMOLOGICAL SOCIETY262
NORFOLK (VA.) POMOLOGICAL AND HORTI-
· CULTURAL SOCIETY
VEGETABLE GARDEN—WORK FOR JULY263
Managing a Dairy Establishment264
MILK PRODUCERS AND CONTRACTORS264

THE BRITTANY CATTLE
SWINE BREEDERS' CONVENTION
THE TEST OF THE SHAMBLES
SALE OF FEARNAUGHT YEARLINGS266
THE IMPORTANCE OF CARE IN BREEDING 267
WHAT A YOUNG LADY DID LAST YEAR267
Eggs as a Commercial Commodity267
The Gapes
Sowing Blue Grass Seed
NATIONAL AGRICULTURAL CONGRESS269
Mr. Newton's Letter
THE WHEAT CROP
SEED GROWING IN VIRGINIA
Mr. Schmidt's Vineyard
OUR ADVERTISERS
CROPS, &c., IN NORTH CAROLINA
THE CORN CROP
AGRICULTURAL MEETINGS IN BALTIMORE CO.273
HEAVY EXPORTS OF CORN
SHEEP IN THE SOUTH274
LIME IN CROPS
FLORICULTURE, &c., by W. D. Brackenridge, 275
MAKING MANURE FOR A GRASS CROP276
Domestic Recipes
A DAY IN THE FIELDS (Poetry)277
A SAD CALAMITY277
TREATMENT OF FLOWERS
How to Care for the Lungs
HOME AND ITS QUEEN278
Interesting Statistics
HASTE AND HEALTH279
BALTIMORE MARKETS279

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[ESTABLISHED 1848.]



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JOSHUA HORNER, Jr.

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# AMERICAN FARMER

### RURAL REGISTER.

#### PUBLISHED BY SAML. SANDS & SON, BALTIMORE, MD.

Vol. II.-No. 7.]

JULY, 1873.

NEW SERIES.

### Phosphatic Fertilizers.

In the present number of the Farmer will be found many valuable papers, none of which perhaps are of greater importance than that given below. We are told by good authority that very few farmers at the South now attempt to raise Cotton without the aid of more or less commercial manures, and yet experience has taught that these concentrated fertilizers can only be depended on as a supplement to farm-yard or other vegetable manures, as without humus in the soil no reliance can be placed on the action of chemical manures. Hence the necessity of a more intimate knowledge of the constituents of those manufactured articles, of those most useful for the respective crops to which they may be applied, and the readiest manner in which they can be manufactured in such proportions as are required by the crop. In the article alhuded to, as well as in that of Mr. Lawes, which follows it, all these instructions are given.

The following Review of Prof. Morfit's work on "Mineral Manures and Pure Phosphates," (to which we alluded a few months since at some length,) is from the "Practical Magazine: an Illustrated Cyclopædia of Industrial News, Inventions and Improvements, collated from Poreign and British sources, for the use of those concerned in raw Materials, Machinery, Manufactures, Building and Decemtion," published in London, monthly, each number containing 80 pages, quarto, with numerous engravings, executed in the

finest style. We think it probable that no work of the same high character has ever issued from the press upon the subjects on which it treats, and we would recommend to men of science and all engaged in researches connected with the arts, to examine this invaluable work, which they can do at our office. The number before us is the first of the publication, dated January, 1873, and has been received from London by the editors of the Farmer. The review, by the talented editor, of Prof. Morfit's work, we deem of such importance at the present time, when there is so great an enquiry and investigation going on in relation to phosphatic and other commercial manures, that we have concluded to present it almost entire, to our readers. We will but briefly remark, that the views we expressed in our last upon the subject of phosphatic mineral manures and bone dust, are fully borne out by the writer, who says that "Bones and bone dust may be spread upon fields with profit, though slow: but mineral phosphates, in lumps or powder, would have to weather many seasons before any advantage became visible in blade or car,"hence the absolute necessity for the latter being converted into a superphosphate.

[From the London "Practical Magazine"]

What we especially only in Dr. Campbell Morfit, as a chemist and author, is the thorough combination of the man of science with the man of practice. Practical men rarely write books, they are commonly too deeply engrossed in business to have either the will or the leisure for literary composition. Hut when a practical man does write a book, how good

it is even in spite of defects! Without despising theoretical information, what differences there are between hearing and seeing, and between seeing and doing! The recipe for a pudding may be perfectly intelligible, but how much more instructive to see the pudding made, and how much more still to make it with one's own hand, according to the lesson thus learned! Even so it is throughout the whole realm of science. Speculative knowledge gains immeasurably in fulness and precision, by reduction to personal experience; and this sense of reality won through experience is, we repeat, the prime charm of Dr. Morfit's magnificent volume. What he describes, that he has accomplished. His treatise is the fruit of an extensive series of experiments on a commercial scale, of which few professional chemists have had the advantage; and the information is conveyed in a style, simple, lucid, and straightforward. It would be easy to repeat any operation from his instructions, and indeed, to set up a factory with no assistance beyond his pages and drawings. Every detail is set forth with workmanlike accuracy, and this is, we think, a singular merit. It has been our lot to refer to many standard scientific works for advice, and found admirable guidance up to a certain point, or as to certain points, and then to be left as to some essentials in haze or utter darkness.

It was a bright day for agriculture, when the happy idea was suggested that phosphate of lime was not limited to the bones of the contemporary animal kingdom, but might be had from a variety of minerals. The story runs, that when the late Dr. Henslow was professor of Botany at Cambridge, there was brought to him by a farmer, a few fossils; he saw, being somewhat of a chemist and geologist, that they were not, as fossils usually are. carbonate of lime, but phosphate of lime. He said at once, as by an inspiration, 'You have found a treasure, not a gold mine, indeed, but a food mine. This is bone-earth, which we are at our wits' end to get for our grain and pulse; which we are importing as expensive bones all the way from Buenos Ayres. Only find enough of it, and you will increase im-mensely the food supply of England.'

The hint was not lost. It was verified and commended by chemist after chemist. First the coprolites of Cambridgeshire were turned to account, and by-and-by Norway and the West Indies, Spain and South Carolina began to yield extensively to the demand for mineral phosphates. Every year widens the sources of supply, and the ends of the earth will be ransacked for a commodity for which there is now a market as ready as for iron or wool,

coal or gold.

Here a reader may inquire in what consists the efficacy of phosphate of lime as a fertilizer; and the reply would be in the phosphorus contained therein. As is well known, phosphorus is distilled from bones, and bones and phosphate of lime are chemically almost convertible terms. It is not, however, to be sup-

posed that the phosphorus in phosphate of lime is free phosphorus, or in other words, that phosphate of lime is a mechanical mixture of phosphorus and lime. No; each couple of atoms of phosphorus is chemically united with five atoms of oxygen, constituting the acid known as phosphoric acid, which acid is locked up, and neutralized with three atoms of lime. Phosphate of lime is thus a complex material with lime for a base, phosphorus for a crown, and oxygen as the bond of union.

The virtue of bones as manure has been

long recognized, but not until the days of modern chemistry was the reason discovered. And when discovered, then all means were adopted to let the plants have the phosphorus whereon they thrived most readily. As animals chew their food to render its digestion and assimilation easy, so agriculturists had bones reduced to powder ere spreading them on the soil. Then chemists suggested yet further improvement; bones ground ever so fine, they said, are insoluble in water, let us make them soluble. For this purpose they added sulphuric acid, otherwise oil of vitriol, to the bone dust, the result being that the phosphoric acid was displaced from two-thirds of the lime, which two-thirds of lime combined with the acid or vitriol to form sulphate of lime. The phosphoric acid left in combination with one-third of the lime is soluble in water, and what is technically known as 'superphosphate.' Than the said superphosphate, the farmer has no more trustworthy resource. It is to his wheat crops especially what good fare is to his pigs. The return is not less certain in the one case than the other.

But as will reasonably be inferred, the supply of bones for superphosphate fell far below the demand and the necessities of agriculture, and hence the prodigious importance of coprolites and other crude mineral phosphates. Here arises the occasion for such an elaborate work as that of Dr. Morfit, wherein the op-erative is taught to work understandingly, with full instruction as to each successive step, theory and practice being happily blended. Strange to say, notwithstanding the vast extent of the commerce in mineral phosphates, this is the first systematic treatise concerning them. Literature lags behind industry. How many branches of art and manufacture are not only without history, but without description, processes of great value existing only by tradition!

The preparation of mineral phosphates for manure is substantially the same as that pursued with bones; but inasmuch as mineral phosphates are of a denser structure, trituration and treatment with acid are essential. Bones and bone dust may be spread upon fields with profit, though slow; but mineral phosphates, in lumps or powder, would have to weather many seasons before any advantage became visible in blade or ear.

Mineral phosphates are, therefore, first broken into suitable pieces, and ground to fine powder between heavy cast-iron rollers. This powder is then ready for conversion into 'su-

perphosphate,' and the process is thus de-

scribed by Dr. Mortit :-

'The usual rough and ready method of preparing this fertilizer is to make a mound of about two feet high and six or eight feet in diameter, with a given weight of powdered coprofites, rock guano, maristone, or other crude phosphates of lime; then to shovel out the centre, so as to form a bowl with a rim or circumference ten or twelve inches thick, and fill the hollow with an equal weight of brown oil of vitriol previously diluted with water.

"This preparation being completed, the powder removed from the centre to form the bowl is put back by degrees; that is, by shovelfuls at a time, until all has been added. By means of a hoe, the mass is mixed next into a paste, and incorporated, finally, with the dry portion, constituting the sides or walls of the bowl. It is left, then, for several days, and, at the end of that time, if it should not be dry, it is treated with a sufficient quantity of ground gypsum, powdered mineral phosphate, sawdust, peat or kindred powder to bring it into a dry state.

bring it into a dry state.

'Finally, it is broken down to a granular powder and packed in bags or casks for mar-

ket.

Such is the whole mystery of the farmers' superphosphate,' and it is fitly characterized by Dr. Morit as "slovenly and unscientific." In the first place, the result is a most irregular and uncertain composition, of which actual superphosphate rarely forms more than from 25 per cent in the best samples, to 18 per cent, in average samples, and sinking to an insignificant fraction in what may be called fraudulent samples. It is to be remarked, as

Dr. Morfit observes, that -

'In Nature, the instances of a pure phosphate of lime are very rare, and on such a small scale that they only suffice as cabinet specimens. The highest grades known are the phosphorite of Spain and certain apatites of Canada. These contain as much as 90 percent of phosphate of lime, when selected or so screened that the richer masses may be separated from the poorer. This culling operation shows, however, that the inferior parts form so nearly the whole of the amount of the mineral as to render those sources of a very rich material for superphosphating purposes very narrow indeed. They could not be depended upon for a supply of any greater uniform average richness than 70 per cent., even were they conveniently situated for mining and transporting the product.'

The facts lend emphasis to the assertion that the common method of superphosphating is 'slovenly and unscientific.' A mineral phosphate consists of a variable per centage of phosphate of lime intermingled with chalk, silica, magnesia, oxides and phosphate of alumina and iron, fluoride of calcium, silicate of lime, &c. Now, when sulphuric acid is introduced to such a miscellaneous collection of materials, a complex and incalculable re-action ensure. Chalk is the most bulky ingredient, and under the action of the acid it is conver-

ted into gypsum. Summarily it may be stated, that when a farmer buys a ton of 'superphosphate' he carries off from fourteen hundred weight to eighteen hundred weight of rubbish; or, if rubbish be too strong a word, let us say that with from six hundred weight to two hundred weight of what he does want the farmer purchases from fourteen hundred weight to eighteen hundred weight of what he does not want.

The Reviewer then alludes to the "imposition practiced on the farmer in the frequent assertion by 'commercial chemists' in their published analyses, that the phosphoric acid in combination with the oxides of aluminum and iron is equivalent in value to the phosphoric acid in combination with lime," which is pronounced to be untrue, and declares that when they are purchased as equivalent to phosphate of lime, "is to be cheated"-and the chemists thus lending themselves to such impositions are denounced for their subserviency in thus lowering the dignity of their profession. It is further shown, that "mineral phosphates cease to be profitable for manufacturing purposes when they contain less than 24 per cent. of actual phosphate of lime." After admitting that the "rough and ready method for the manufacture of superphosphate," as already described, "is viewed with dissatisfaction by those who love accuracy and economy, and strive after perfection," the writer proceeds to give the following brief account of Dr. Morfit's own great improvements in the production of pure phosphate of lime :-- ]

"The problem evidently shaped itself to him thus:—Given a mineral containing phosphate of line, How can the phosphate be delivered from impurities and presented to agriculturists as simple phosphate of lime and

nothing else?

Hydrochloric acid, otherwise called muriatic, is evolved in vast quantities in the manufacture of soda from common salt. For the acid there are numerous uses, but its production is in great excess of these uses, and in many parts there is serious difficulty in getting rid of it inoffensively. In this cheap acid Dr. Morfit finds a solvent for mineral phosphates of whatever grade. The mineral is reduced to powder, and according to its constituents is treated to a proper quantity of acid in a suitable vat, the mixture and solution being hastened by a 'blow up' or jet of steam from the bottom. The result is that the soluble matter is separated from the insoluble, the soluble containing the whole of the phosphates; the insoluble consisting chiefly of silica, which is cast out as worthless.

So far good. The next step is to separate the phosphate of lime from the substances

which have accompanied it into solution. Chief among these is chalk, otherwise carbonate of lime, an ever present adherent of mineral phosphate of lime. In the ordinary method of 'superphosphating' with sulphuric acid, as we have observed, the chalk is converted into gypsum, otherwise plaster of Paris or sulphate of lime, which remains to burden and degrade the manure. By hydrochloric acid the chalk is converted into chloride of calcium, how dealt with we shall presently see. Generally associated with phosphate of lime, and in varied proportions, are the phosphates of aluminum and iron, and which, like the chalk, it is desirable to separate. The substances of importance therefore in the hydrochloric solution may be thus set forth for the sake of distinctness:—

Phosphate of Lime to be separated from Chloride of Calcium, Phosphate of Aluminum,

and Phosphate of Iron.

The process of separation is a remarkable valuable discovery of Dr. Morfit. To the solution is added a proper equivalent of the oxides and phosphates of aluminum and iron—the very impurities from which it is desired to deliver the phosphate of lime—and immediately the phosphate of lime is precipitated as a pure white powder. Out of all its unprofitable connections it falls like snow—a material bitherto known only in chemists' bottles is delivered by the sack to practical

agriculture!

Such precipitated phosphate of lime is superior to bone-dust or bone-ash, and only requires to be dried to be fit for use. By many judicious agriculturists it begins to be suspected that the demand for soluble phosphate is a mistake. First, it is questionable whether its solubility is maintained on the soil, inas-much as 'superphsphate' is known to 'go back,' as the phrase is, or to relapse into in-solubility ere it leaves the factory, and therefore a needless waste of sulphuric acid is incurred; or, secondly, if the phosphate does remain soluble, whether it is not washed away before the crops have had time to appropriate it. At any rate, if soluble phosphate must be had, it is easy to treat the precipitated phosphate with a sufficient quantity of sulphuric acid. Two-thirds of the lime will thus be withdrawn from the phosphoric acid and converted into sulphate of lime; and that will be the limit, may we say? of adulteration. Our clear conviction however is, that when Morfit's precipitated phosphate comes fully into use, its dilution with sulphuric acid will rarely be attempted.

The supernatant solution, the mother-liquor or mother-water, as it is technically known, out of which the phosphate of lime has been precipitated, remains to be dealt with. Let it not be forgotten that it is a strong solution of phosphate of aluminum and iron and Chloride of calcium—and of the latter let us speak first, for it may be called, in Dr. Morfit's plarase, 'the profligate element' in the operation. For chloride of calcium there are few applications, and these are comparatively unimpor-

tant. It is perhaps the most deliquescent of salts, that is to say, it has a most energetic affinity for moisture. A place where it is spread quickly gets wet and keeps wet. Hence its recent adoption in Westminister in solution for watering the streets. It is also used in the manufacture of artificial stone—a business at present in its infancy. Nevertheless, where a choice can be exercised, a mineral phosphate with the least chalk will always

have the preference.

The phosphates of aluminum and iron are in a different case. Though of little value as manure, and, therefore, to be carefully separated from the phosphate of lime, they are of great value in themselves, and especially in the tender pulp in which they are exhibited in Dr. Morfit's process. Indeed, the phosphate of aluminum is extensively imported for conversion into alum and crude phosphoric acid, by Mr. Peter Spence, of Manchester, and into phosphate of soda and alumina by Mr. Joseph Townsend of Glasgow. Then, too, the phos-phates of alumina and iron are largely employed in sewage precipitation under Forbes' system, and when so employed are reduced in hydrochloric solution to precisely the same condition as they exist in Morfit's motherliquor after the phosphate of lime has been deposited.

The probability is that it will be found advisable to subject all mineral phosphates, however rich, to solution and precipitation from hydrochloric acid. A pure precipitated phosphate of lime may be regarded as manure in perfection—the most concentrated form of plant-food. As for mineral phosphates of low grade, as they are styled, containing little phosphate of lime, Dr. Morfit's process threatens to effect a revolution in the phosphatens of the property of

phate market.

We have enlarged on Dr. Morfit's own contribution to the manipulation of phosphates, because impressed with its novelty and importance, but it by no means receives similar attention under his own hand. Indeed, his modesty and generosity in the exhibition of the claims of others are entitled to cordial recognition. Finally, we may remark that he displays throughout his treatise the most enlightened opinions on fertilizers. He has no nostrum to recommend. He clearly sees that diverse soils and diverse crops require diverse manures, and that there is no safety for the farmer in blind imitation or in rule of thumb. The farmer of the future must be able to give a special reason for his special practice at every turn; in short, he will have to bring to his business such qualities as we look for in a chemist to his laboratory, and in a physician with his patients. In a word, he will ever have to bear in mind that he cannot get some-thing from nothing; that what he takes from the soil in crops he must restore in manure, and chiefly in phosphorus and ammonia.

In Great Britain the returns for 1872, show that only six per cent. of the working population are employed in tillage and husbandry.

#### Mr. Lawes on Commercial Fertilizers.

In answer to a correspondent, in our last, as to the comparative value of the S. Carolina phosphates and bone dust, we quoted a remark from Mr. J. B. Lawes, of England, for years a manufacturer of Commercial Manures. (from which business he has recently retired, having sold his interest in it for some two millions of dollars.) The great value of this gentleman's testimony upon the matters upon which he writes, induces us to publish the letter entire. It will be seen that Mr. Lawes considers this article as the cheapest for obtaining a superphosphate of any now known -and the possession of these denosits will be of greater importance to South Carolina and the other Southern States, than would be the gold mines of California, if they were within her borders-for they are inexhaustible.

The letter was addressed to the Treasurer of the Mass. Society for Promoting Agriculture, who, in giving Mr. Lawes' letter to the public, accompanies it with the following note, showing the praiseworthy efforts which that venerable association habitually makes for the furtherance of the interests of agriculture. These letters speak for themselves. Mr. Saltonstall, it will be seen, is doubtful whether the views of Mr. Lawes in regard to the necessity of so large a quantity of nitrogen are applicable for the soils of New England, and whether they do not require some artificial supply of potash. The same suggestions are applicable farther South. Mr. Saltonstall says :-

"The Massachusetts Society for Promoting Agriculture has spent a part of its income for the past year in causing analyses to be made of many of the commonest commercial fertilizers for sale in the market, and the difference in the result between the real value and the sale price would greatly surprise any one who thought he was getting his money's worth.

"The value of this letter is, first, in its remarks on the manufacture of superphosphate; showing that Charleston phosphate is exported to England, and there made into superphosphate, very much stronger than any I have heard of in America, costing only say five dollars (gold) per ton. According to Mr. Lawes, a better superphosphate than any we now have ought to be sold here for \$20 per ton, and a profit realized which should pay the manufacturer handsomely, and it is to this that we wish to call attention.

"Secondly, the value of the letter is in Mr. Lawes' 'Summary of his Experience and Practice for thirty years.'

"The Massachusetts Society are not ready to endorse this yet, because it is a question whether the same treatment will be best for the climate and rich soils of England and for the climate and poor soils of New England—whether our soil will use to advantage so large a supply of nitrogen, and whether it does not require some artificial supply of potash. Of this each must judge by experiment, or by his knowledge of the requirements of his own land."

MR. LAWES' LETTER.
Rothamsted, St. Albans, March 25, 1873.
HENRY SALTONSTALL, ESQ.,
Treasurer Massachusetts Society

for Promoting Agriculture : DEAR SIR: Dr. Gilbert has requested me to answer your letter of the 21st of January, and to inform you that in accordance with your request, I have forwarded to you through Messrs. Saunders & Co., Liverpool, three tons of superphosphate of lime. I am very sorry that so much delay has taken place in this matter, but it was found necessary to have the manure packed in casks, and these casks caused delay in the order. I have for some time ceased to be a manufacturer of commercial manure, and therefore had not the same authority as formerly. The manures I have forwarded to you are made entirely from Charleston phosphate and sulphuric acid. I have selected this substance in preference to our own phosphate as better to prove to you that you have one of the best phosphates which the world produces, and also one which can yield a commercial superphosphate cheaper than any other. Charleston phosphate, as imported into this country, contains from 57 to 60 per cent. of phosphate of lime; when ground and mixed with sulphuric acid in the proportion of 100 phosphate to about 80 acid, it yields a product of 30 to 33 phosphate rendered soluble, and not more than 3 to 4 per cent. insoluble. In your country the phosphate can be raised at a cost of less than 20s. per ton, the grinding would cost, at the most, 5s. per ton, the acid 50s. per ton; in fact the net cost of the superphosphate, ready to pack into bags, ought not to be more than 40s. per ton of 2240 lbs., and all the phosphoric acid should be rendered soluble except 2 or 3 As these manures are required for per cent. experimental purposes, I beg to offer them to the Massachusetts Agricultural Society without charge, and also the following summary, which may be said to comprise the results of my experience and practice in regard to artificial manures for the last thirty years.

The only two substances really required in artificial manures, are—

1st. Nitrogen. 2d. Phosphate of lime.

Nitrogen is useful in three forms—

1st. As nitric acid. 2d. As ammonia.

3d. As organic decomposable matter, yielding ammonia or nitric acid.

Nitrogen is more valuable in the form of nitric acid than it is as ammonia, and ammonia

is more valuable than decaying substances yielding it. The best possible manure for all gramineous crops, wheat, barley, maize, oats, sugar cane, rice, pasture, grass, is a mixture of superphosphate of lime and nitrate of soda. 300 lbs. of superphosphate of lime and 275 lbs. of nitrate of soda applied every year to one acre of ordinary English land, has for twenty consecutive years given a produce annually of 6 quarters of barley; 14 tons of farm-yard dung applied annually over the same period has given the same produce of Superphosphate of lime is a special chemical manufacture which can be made cheaper on a large than on a small scale, and therefore farmers ought to purchase it cheaper than they can make it, but it is better to make up their own compound manures, purchasing their nitrate of soda or salts of ammonia. It is not advisable to sow artificial manure with beans, peas, tares or other leguminous plants. Corn and root crops will take all the artificial manure which the farmer can afford to pay for. Superphosphate of lime should always be placed under the soil, either by drilling or harrowing in when the seed is sown. Nitrate of soda may be sown in the same way, or it may be sown broadcast when the crop is up. The increase in the growth of the cereal crop is much more dependent upon the nitrogen supplied than on the phosphoric acid. Potash is generally found in sufficient quantities in soils, and the artificial supply is not required. J. B. LAWES.

To the statement above of Mr. Lawes, that the cost in this country of superphosphate made from the Charleston phosphate, containing from 57 to 60 per cent. of phosphate of lime, ought not to be more than 40s. for a ton of 2240 lbs, and that it should contain 30 to 33 per cent. of soluble phosphate of lime, the manufacturers object, and as it appears, with good reason. One of them, Mr. C. P. Hewes, in a recent letter to the Country Gentleman. shows that the net cost of superphosphate on the ground at Charleston is \$29.04 per ton of 2240 lbs., (this including \$2, cost of bags,) and that this superphosphate, when produced from Charleston phosphate yielding 60 per cent. of phosphate of lime, would give but 25.81 per cent. of soluble phosphate of lime, instead of 30 to 33, as represented by Mr. Lawes.

Below we give the detailed statement of Mr. Hewes of the cost of the materials of a ton of 2000 lbs, of the superphosphate, no account being taken of the labor, &c.

2048.40 lbs. (less loss, 48.40), 2000 lbs. for \$24.15

#### Seed Drills.

As soon as harvest is over, the attention of the farmer will be drawn to the next most important work of the year, the preparation of his land for another year's crop of wheat, rye, or grass-and it will be well for him to be making due inquiry not only for the best varieties of seed, but more especially at an early period, to have his mind settled as to the best implements, Plows, Harrows and Rollers; and to consider whether it is to his interest to put his grain in with a drill or to continue the primitive plan, of broadcasting his seed. 'We have, in our time, frequently given our opinion of the advantages of the drill system over that of broadcasting-and the views presented in a series of able papers upon the subject, which we find in the Canada Farmer, are so entirely in accordance with our own thus set forth, that we are induced to present the substance of them to the consideration of our readers, in place of repeating our formerly expressed opinions upon the subject :-

The Seed-Drill, as its name implies, is intended to supersede "broadcasting" or sowing by hand. Its advantages are clearly indisputable, and the main reason why it has in some cases failed to receive the hearty adoption of excellent practical farmers is, that until within a comparatively recent date it has never been practically applied or adapted to the different requirements of seeding. Now, however, this defect has been fully remedied, so that one and the same implement may be readily and profitably applied to the sowing, not only of wheat and the other finer cereals, but also to all the coarser grains, as corn, peas. oats, beans, &c., &c.; and likewise to the various fertilizers, as plaster, lime, ashes, guano, superphosphate, bone-dust, salt, &c., &c., either dry or damp.

The principal advantages derived from sow-

The principal advantages derived from sowing by drill may be briefly summarized as fol-

lows:-

1st. The seed is delivered with regularity.

2d. It is deposited at a uniform and proper depth.

3d. Weeds, during the growth of plants, are destroyed with greater facility.

4th. The plants cultivated receive the undivided benefit of the soil, and have not to maintain a constant struggle with weeds.

5th. By the admission of the sun and air between the rows a stronger and healthier plant is produced, and of course a heavier crop.

6th. By stirring the soil it is more susceptible of benefit from the atmosphere—imbibing more oxygen and being warmed and enriched by the sun.

7th. The soil being pulverized, the roots shoot out more freely.

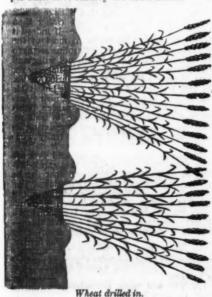
8th. Clover and grass seed answer incomparably better in the pulverization produced by hoeing.

9th. The grain being put into the ground at a proper depth, the plants are not exposed to



Wheat sown broadcast.

In addition to these considerations there is another, viz., that the seed is invariably covered, whereas in hand-sowing, a considerable quantity is left wholly exposed and consequently wasted. And from this fact another follows, which has been verified by experience: that 25 per cent. of seed is saved by the drill, and the yield is believed to be from 10 to 15 per cent. more than by the usual modes.



Running the drills north and south, also, when practicable, secures another advantage in giving free access to both sun and air, and thus in a great degree checking the tendency to rust.

The paper from which we quote, gives a decided preference to the Bickford & Huffman drill over all others, and this coincides with the views of the N. Y. State Agricultural Society's Committee upon the subject in their able report upon the practical tests of Agricultural machinery, (the only proper means to decide cases of superiority, instead of that usually adopted at agricultural exhibitions, where the premiums are frequently awarded to conciliate exhibitors, instead of being bestowed according to intrinsic merit.) The Farmer says:—

The best drill at present in the market, and one which will be found a boon to any farmer, is constructed on the principle of the celebrated "Bickford & Huffman" drill, and known under different names as the "Farmer's Favorite," "Combination Drill," &c., &c.

The distinguishing features of this machine are a double force feed or distributor, a sliding grain bottom, rubber leather funnels with metal hangings, jointed ground tube, double reversible champered steel tube points, automatic gear shifter, and a tube shifter.

The double distributors are constructed with two separate feeds, one upon either face of the distributing wheel, and one of much greater capacity than the other.

The smallest of feeds will sow wheat, rye, buckwheat or flax in the very best manner;—the discharge being constantly within full view of the operator, and subject to any adjustment without injury to the seed, or a possibility of "bunching" or "stooling" the grain.

The larger feed sows oats, corn, peas, barley

The larger feed sows oats, corn, peas, barley and all coarse grains just as perfectly as the other set sows the finer ones. This double feed adds nothing to the weight of the implement, nor does it increase its mechanism, whilst it doubles its usefulness, by adapting it to the seeding of spring grain,—a work heretofore a comparative failure when attempted with most or all of the earlier kinds of drills.

The best time to apply manure as a top-dressing for grass is probably early in the spring. But I have been astonished to find how rapidly the manure works down among the grass (or how soon the grass works up into the manure) and disappears, no matter when applied. Some farmers hesitate to top-dress their grass land for fear it may give the grass a rank taste. If the manure is evenly spread and thoroughly harrowed there is no difficulty of this kind. Sheep and cows will eat the top-dressed grass in preference to that in the same field where no manure has been applied.—Joseph Harris.

### The Vinepard.

#### Vine Culture-Wine Making.

To the Editors American Farmer :

At the close of my last letter I alluded to the difficulty of making good natural wine from unpruned vines. These seldom ripen their fruit, and the first and chief requisite in wine-making is that the grapes should be per-fectly ripe. The vine bears its fruit only upon the wood of the last year's growth, and the object of pruning is two-fold, viz: to secure each year a proper amount of new and mature wood for the crop of the next year. and also to improve the quality of the grapes of the present season. The strength of the vine should not be wasted in growing useless wood, or in the vain effort to raise more fruit than it can perfectly mature. Many persons suppose that because young unpruned vines bear luxuriant crops, that they should not be trimmed at all. But this fertility is delusive The roots being overtaxed and transitory. to support the mass of wood and fruit, the in regard to pruning are modified by the habit of the variety, the strength of the soil, and the mode of training; but the observant planter will soon learn the best treatment for his vines-how much fruit they can carry to perfection-and he will grow no more young wood than is necessary to obtain that amount of fruit each year. In vineyard culture, on ordinary soils, thirty or forty clusters of our large grapes is a sufficient load for each vine; and of those varieties having small bunches and berries—like the Clinton and Norton— twice as many may be retained. These will generally ripen thoroughly, and make good wine-wine that will keep and improve with age-while the mass of grapes allowed to grow upon unpruned vines will seldom make a palatable wine without the addition of sugar and it is not durable.

Although there are nearly a thousand distinct varieties of grapes in Europe, (the Luxemburg collection alone comprises over five hundred,) but very few of them produce first class wines. The best brands of German, French and Hungarian wines are made from a few sorts found best adapted to the locality in which cultivated. No foreign grape has proved to be of much value for open air culture in the United States, excepting some grown in California, which were planted there by the early missionaries, and are said to be of Spanish origin. But the climate of the Pacific slope is not subject to the sudden and great changes of temperature and the torrential rains which characterize our summers

in the Atlantic States.

Of late years the varieties of native grapes have been rapidly increased, (some of our nurserymen have over a hundred on their catalogues,) yet not a dozen of them are worthy of extensive cultivation. For a long

while the Catawba was the only one that could claim to be ranked pre-eminently as a wine grape. In many respects it has no superior even now, especially for sparkling wine. Its juice ripens rapidly, and tastes, from the first fermentation, like old wine, and possesses an agreeable and inimitable bouquet. Its muscadine aroma cannot be counterfeited. and is exhibited in the brandy distilled from its pomace even more than in the wine, though a well made bottle of either, if left uncorked, will soon fill a room with its fragrance. Catawba also, when perfectly ripe, is, I think, next to the Delaware and Herbemont, the best table grape we have. These three varieties, though subject to disease, yield such excellent wines, that they should have a place in every vineyard, since it is now possible to arrest the ravages of the oidium. The Norarrest the ravages of the oidium. ton and Cynthiana are to be classed with our best wine grapes, where they find a congenial soil, and should be tried by all vine-growers. The Clinton is also quite hardy and makes a fair wine, but not so good as those above men-The most productive of American grapes is the Scuppernong of the South, which is said to yield-without much labor or attention-between two and three thousand gallons per acre. In this respect certainly no other grape, foreign or native, can compare with it. The Aramon of France yields twelve hundred gallons to the acre as an average; and that is probably the best product of our Concord, under good treatment. The Scuppernong is generally Gallized, that is, watered and sugared; and by that process probably four thousand gallons may have been made from an acre. Judging from the very few samples of Scuppernong that I have seen, I should class it among cordials rather than wines. This remarkable grape—if indeed it is a true grape-luxuriates in most of the Southern States, though N. Carolina seems to be its favorite habitat. It will not withstand the rigors of our climate, and I have never seen it growing north of Albemarle Co., Va. In 1863 I spent a few days at the hospitable mansion of Franklin Minor, Esq., near Charlottsville, and found it in his garden, but it did not look healthy. He said its fruit resembled the sloe or plum, and considering its thick skin, its yield of wine is really wonderful.

In our latitude the Concord and Ives are now about the only varieties that can be relied on for profitable crops, and that can be recommended for all soils and situations. The wines made from them are good, but not of the first quality. So far they have been exempt from disease, though the Ives sometimes shows symptoms of it, and both of themlike their predecessors in public favor-may eventually yield to its influence. One has but to examine the roots of these two varieties to appreciate their superior vigor and productiveness. I have often known cuttings made from their wood to form roots five or six feet long in a single summer, when the Catawba would not grow more than as many inches, in the same soil. It must be no ordinary cause that can affect injuriously the health of such

robust plants.

Much attention has been given to the mildew, grey rot, speck, red leaf, and other forms of the disease that affects the leaves or fruit (of-ten both) of the grape vine. It is conceded to be caused by a fungus or parasitic plant, now generally known as oidium. It appears as suddenly as the rust on wheat, and it is just such damp and sultry weather as favors that blight. If the condition of the atmosphere remains unchanged for a few days, its progress is very rapid, and the most promising crops are destroyed in a single week. Sometimes the fungus attacks only the leaves; at other periods—especially later in the season, when the grapes are coloring—it extends to the fruit, destroying the outer skin and causing the berries to burst and decay. If a sudden and decided change of atmosphere occurs immediately after it appears-if it becomes dry and agitated-the disease vanishes, leaving merely a speck upon such grapes as it had touched. Though these specked berries may not drop, but apparently mature with the rest of the bunch, they are generally bitter, and should be removed from the clusters at the vintage. Young vines are hardy enough to resist the disease for the first few years after they come into bearing, and produce well, while the fruit of old vines in the same vineyard is destroyed by the oidium. Hence some persons have adopted the plan of layering their vines every few years, so as to have young and vigorous stocks to take the place of those enfeebled by disease. In view of the possibility that layering may be found a sufficient remedy for oidium, wide planting would seem preferable at the first laying out of a vineyard.

But of late years the disease has been found perfectly and easily curable in Europe, by the judicious use of powdered sulphur, which is applied to the vines with a bellows, three times in the course of a season. The whole operation and its results are minutely described in a pamphlet entitled—"A manual for the sul-phuring of diseased vines,"—published by H. H. Mares of Montpellier, one of the most intelligent vineyard proprietors of France. It should be in the hands of every American vine grower. If you desire it, I will prepare for your columns a summary of this instructive pamphlet. The most valuable parts of it may be compressed in a few pages of the Farmer. Considering that some of our best grapes, producing the most delicate and costly wines, are frequently assailed by this disease, the cheap mode of arresting it now practiced so successfully in Europe, should be promulgated by the agricultural press of the United States.\*

The process in wine-making varies widely in different countries, and depends much upon the variety of grapes and the class of wine sought to be produced; but the first requisite in all is fruit perfectly ripe. This period is when the pulp has been converted into juice, the skins thin and somewhat shrunken, and the stems begin to dry and turn brown. If the season has been unfavorable and the vintage cannot be delayed with safety until this maturity is attained upon the vines, then the grapes should be gathered some days before they are pressed, and spread out to dry on shelves, tables or clean straw in an airy building (the press-house, if arranged for the purpose, as it should be) just as apples are allowed to mellow and ripen after gathering and before their conversion into cider. In this way much water and acid is got rid of, while the sugar, aroma and most valuable qualities of the fruit remain. For gathering the grapes, clean unpainted wood or tin buckets and sharp The laborers should knives are required. cut off the bunches close to the berries, leaving as much as possible of the acid stems upon the vines. Every green or specked berry should be removed from the clusters before they are thrown into the pails. In some countries and in some American vineyards, the grapes are removed from the stems before pressing. This is done by rubbing the bunches over a wooden or iron screen, which retains the stalks while the berries fall through the meshes into tubs beneath. This operation is, I think, important and useful only in bad years, when the grapes have not ripened well.

The practice of crushing the grapes by trampling upon them—"fouler a pied"—still prevails generally in Europe. The fruit is thrown in a huge pile on the bed of the press. and a number of men, with trowsers rolled above the knees, trot around upon it; beginning at the outer circumference, and gradually contracting their circuit until they reach the centre. It is insisted that nothing so effectually crushes the grape without breaking the seed, as the tread of naked feet. For my part I prefer the all-sufficient and rapid crushing effected by any of our excellent wine-mills. In Burgundy they not only trample the grape, but in many establishments the men strip naked—"naked as Adam when he was good," -and go into the vats chin deep, and stir about the mass. They claim that the warmth of the human body is necessary to give the proper temperature for fermentation. This is certainly a very foul custom, and it is to be hoped that no American wine-maker will ever

put even his foot in it.

As a general rule, each kind of grape should be gathered and prepared separately; but some very superior wines may be made by mixing varieties, each possessing some valuable quality wanting in the other. The best wine I ever made was from the fruit of some Isabella vines, which I deferred gathering until November, when the labors of the vintage were over. It was mixed and pressed with such scattered bunches of the Catawba

<sup>[\*</sup> Our correspondent has been requested to favor us with the summary, as indicated, and will furnish it for our August No .- Eds. A. Far.]

as could be gleaned in a final search through the vineyard. The excellence of this wine was doubtless due in part to the full maturity of the fruit; but chiefly to the accidental mixture of grapes, and perhaps somewhat to the temperature at the time of fermentation. As I did not, at the time, carefully observe the ratio of the former or condition of the latter, I have never since succeeded in making any

quite equal to it.

After the grapes have been crushed by the mill, I prefer to let them ferment for a day or two in stand-casks before pressing. During this time the mash should be frequently stirred. It should however be left undisturbed for several hours (or the night) before pressing, in order that the skins and stems may rise above the liquid, which should be drawn off through a spiggot near the bottom of the stand-cask, and transferred to its proper cask in the cellar. This is wine of the first quality, and which some wine dressers never mix with that which flows from the press. In quantity it is about one-third of the whole product. The mash is then thrown into the press, and another third is expressed,-being wine of the another third is expressed,—being while a second quality. The pomace is then opened, broken up, and immediately subjected to a second and final pressing, which extracts the remainder of the wine. This is the least valuation of the wine the second and se ble part. But except in extensive vineyards where it is possible to make large quantities of each grade of wine, it is better to mix the product of both pressings with the wine drawn from the stand-casks, and so make a good average article. The press, stand-casks, cellar casks, and all utensils used in the work should be carefully cleaned, as the new wine is easily injured by contact with sour substances, and even by bad odors in the atmosphere. In every vineyard large enough to justify the expense, there should be a press house, with a deep and dry cellar underneath it, which should be used for no other purpose than the making and storage of wine. The cellar casks should be large; for the larger the quantity fermenting in one body, the steadier is the fermentation and the better the wine. In France and Germany, casks of 10,000 gallons are common; and those holding less than 500 gallons are seldom used. Such vintners as have smaller quantities, either sell their wine from the press, or club together and get their wine into large casks.

The juice having been expressed from perfectly ripe fruit, the observance of a few practical and easily comprehended instructions will enable the most inexperienced to make good wholesome wine. It should be immediately poured into the cellar casks for fermentation. These casks should rest upon scaffolding, and not upon the ground of the cellar; and they should be filled only three-fourths full. The fermentation will begin within the next twenty-four hours, and if the casks were entirely filled, much of the wine would run over. In order to retain as much as possible of the aroma and finer essences of the grape, a semi-circular tin tube may be

used; one end to be inserted in the bung of the cask, and the other immersed in a crock of water. The gas will escape in bubbles through the water until the fermentation subsides, but many of the aromas so essential to fine flavored wine are retained. Another advantage of using the tin tube is, that it is not necessary to watch over the fermentation to close the casks as soon as it has ceased, as the external air cannot pass through the water to re-excite the wine. After the fermentation is over, fill the casks brimfull, and drive in the bung. For the first few weeks, re-fill every week, and afterwards, until late in the following spring, re-fill once a month. A cask of the best wine should be left to supply this ullage; and for the use of the wine maker, friends and visitors. In any cask that cannot be kept full, the vacant space should be burned out with brimstone about once a month. Empty casks into which the wine is to be racked, should also be burnt out with sulphur matches, which are prepared as follows: Put common brimstone in a pot over a fire and melt it slowly. When melted, draw through it strips of strong paper an inch wide, and a foot long, and hold them in the air a few min-utes until the sulphur bardens. To burn out a cask, take out the bung, and after setting fire to one of these matches, quickly insert it into the cask, and drive the bung home upon the end of it, so as to hold it suspended while it burns.

Although the wine becomes clear very soon after the fermentation, many persons allow it to remain in the cask upon the lees, undisturbed until the following spring. It should, however, be racked not later than March, and before the second fermentation, which takes place on the advent of mild weather, generally in May. I prefer to separate the wine from its ferment (the lees) as soon as the winter begins, and would recommend racking in December; and if it is not perfectly clear, would rack again in February or March. The wine cannot be safely bottled until the second

fermentation is over.

I intended to add a few words in regard to the temperance or intemperance movement, but its discussion would perhaps be out of place here. I drink a little pure native wine daily, and am convinced that my health is promoted thereby; and I believe the Creator designed it to strengthen and comfort man. It has been used for centuries, and will be used as long as the vine yields its fruit. From an Edinburgh newspaper of recent date, now before me, I learn that the Scotch Presbyterians, who are "abstainers," are endeavoring to find some substitute for communion use; though nothing can be more clear than the Divine injunction concerning it. After hearing a lecture on wines, ancient and modern, from a Mr. Wright, a London chemist, they have decided to use at the communion table an "unfermented wine" manufactured by him. The over-scrupulous people who drink the unnatural products of the chemist's workshop, will be apt to experience some unpleasant sensations in the laboratory of the body. How would the Laird of Balmawhapple have received a "Tappit Hen" of Mr. Wright's mild mixture!

LABORER.

Anne Arundel Co., Md., June, 1878.

#### The Grapes-Effects of the Last Winter.

To the Editors of the American Farmer :

Complying with your request, I report the effects of the late winter on my "hardy grape vines," so called:

Adirondack is killed as far as it is visible even the roots I think are dead.

Allen's Hybrid is killed to the ground. vey is unhurt; every bud has started, and the fruit shows freely. Catawba has stood the winter better than I expected; very little show of damage and good prospect for fruit. Clinton is scarcely injured at all; the signs of fruit are plentiful. Concord has disappointed me; killed down to the ground. Creveling is greatly damaged, yet some buds have started. Delaware exhibits more hardiness than I anticipated; I don't think a bud, scarcely, has been hurt. Diana has been unfortunate; very few canes are growing, and scarcely a sign of fruit. Elsinburg has half of its buds growing, with moderate promise of fruit. Eumelan has gained a good name for hardiness; very little injury, and the canes are growing rapidly -full of fruit. Herbemont feels the Northern climate sorely, and suffers greatly. Iona also is much damaged; it is putting up good shoots from the ground, but there are no signs of fruit. Isabella has been killed to the ground. Israella has been destroyed, wood and bud, to the ground; the wood is rotten, and as yet there are no signs of life in the roots. Lincoln is much hurt, but makes some promise of fruit. Martha is growing from exposed buds, but is too young for fruit. Rogers' Hybrids and Salem are doing only moderately; all will fruit to some extent, but all, especially Salem, show signs of hard treatment. To Kalon is not especially beautiful at present, but may take another start from the roots; it is not by any means a favorite. York Madeira is strong and but little hurt; its canes are full of fruit.

I should remark, that all these vines have gone through five or six winters without injury, exposed to the severity of the climate. Had they been laid on the ground, last fall, even without covering, all or most of them, I think, would have been left uninjured by the cold. Such a winter as the last, with the thermometer often below zero, and once as low as—18°, has no parallel within my experience. No doubt we would be plentifully rewarded for protecting our grapes every

winter.

Another point to which I should call attention is this: well ripened wood stands the cold much better than immature wood. Two of my vines, Iona and Concord, hung all winter around my porch, 10 feet from the ground on the north side of the house, and the wood ripened thoroughly. The Iona has not lost

many buds, and will give some fruit, and the Concord is full of young canes, well supplied with fruit. c. w. R.

Baltimore Co., Md., May 24, 1873.

[The above, intended for June No., was not received until our paper was put to press, and therefore reluctantly omitted. The residence of the writer, a well known and indefatigable amateur in fine fruits, is about ten miles north of Baltimore.—Eds. A. Far.]

#### Grape Growing in Virginia.

To the Editors of the American Farmer:

Dear Sirs: In compliance with your request I will to-day send you a few lines about grapes in this part of Virginia—bow my vines stood the last severe winter. My vineyard was planted in 1868 and 1869, and ever since then has been a source of pleasure and satisfaction to me. Our soil and climate seems particularly adapted to the grape; through wet and dry seasons and cold weather my vines have been growing splendidly; neither the severe drought of last summer nor the cold weather

of the winter has in any way affected them. Of my American varieties not a single vine was injured by the frost, and at this date (11th of June) most all of them are past blooming, and give me the prospect of a fine crop. The Delawares have with me, as in most other localities, proved to be rather slow growers, but have so far kept their leaves each year until long after the fruit had been gathered, and though the plants were small, they always looked healthy and did well. Of the Concords I need not say much; this vigorous grower succeeds well almost everywhere; there was no rot at all last year; bunches large and fine. The Norton's Virginias have rather disappointed me; they are a small black winegrape, and not being juicy, it takes a very large quantity of them to make a gallon of wine, and this again wants a right good age to become paintable. My Ives are teaching again the lesson, never to buy poor plants; I am sorry to say mine were of this kind, and have shown it up to this day. A few good Ives plants, received from Mr. C. T. Schmidt, of Baltimore, among my Concords, have borne heavily last year, and the regular planting was almost without a bunch. This year they are better and promise about half a crop.

Of other varieties I have only a few of each, and can't say much of them yet; I am well pleased with Wilder (Rogers' No. 4.)

With an assortment of imported German varieties I have had bad luck; out of some twenty only eight are alive to-day, and up to one all these were killed to the ground last winter. The one that stood the test is the German Rulander, a vigorous grower and full of bunches. In foliage it somewhat resembles the American Rulander, but its berries are a great deal larger and of fine flavor; so far I am satisfied that it will prove a valuable acquisition.

By the prospects of to-day, Virginia will do her share to supply the markets with grapes this season, and I will take pleasure in sending you a sample of mine, when the time comes. Yours, truly, C. A. Helneken.

Prince William Co., Va., June 11, 1873.

# Agricultural Calendar.

#### Work for the Month-July.

This month is always one of the busiest of the year on the farm, and often so much demands attention that it is difficult to decide what should first be done. In view of our limited space, we omit preliminary remarks and proceed with our notes on seasonable work.

Harvesting.—To the South of us the wheat harvest is generally over, and in this State it will be in full progress by the date of the publication of this issue of the Farmer, and we say no more upon this topic except to refer to our last number, which contained some suggestions worthy, perhaps, of being again consulted as to proper preparation for work to be done, time and mode of cutting grain, &c.

Cultivation of Corn.-From now until the crop is ready to lay by the cultivators ought to be busy. Grass and weeds absorb the moisture from the soil as well as the nutriment which should go to the corn; and frequent and thorough cultivation not only destroys these, but stirs the earth so that it can absorb the fertilizing atoms which the air and the dews furnish. Besides this, the fine surface which is left by the repeated cultivation acts as one of the most efficient of mulches and keeps moist the soil below; so that in times of drought, the more thorough the cultivation the less the evils resulting from the dryness of the summer. To stir the land often is more needed in seasons of great dryness than at any other time, but the use of the plough, which tears up and breaks the roots which appropriate and convey to the plants their nourishment is now only to be deprecated.

Fall Potatoes.—These, too, ought to be kept free from weeds. No crop loses more by them, so that their destruction should be ensured, if it is possible to effect it, by keeping the ground clean and well opened. A top-dressing of ashes, plaster and salt, say one bushel of each to the acre, will be found of profitable application.

Millet and Hungarian Grass.

These crops may be sown up to the middle

of the month. There is a diversity of opinion as to their relative merits. We wish some of our readers would try the two, side by side, under identical conditions of treatment, soil, manure, &c., and report the results as to yield, quality of hay, &c. to the Furmer. The test of succeeding, or different years, is hardly a fair one, since the variation of seasons might make a great difference in the crops. For either crop, a deep, rich, well prepared loamy soil is best. The quantity of seed to the acre is about three pecks, when sown for hay or for soiling; or two pecks when sown for the seed.

If the time will admit of it, we recommend our readers to test a small quantity of their seed before sowing the bulk of it, in order that, if it does not germinate, they may not We suggest this, as we lose time or a crop. have just heard of a friend of the Farmer who this season sowed 100 acres in millet, but none of the seed came up except a small proportion which he raised last season himself. This failure we believe to be an unusual one, and it probably resulted from the too early cutting of the crop from which the seed was made-but as the failure of the seed to mature may have been a result of the dry summer of last year, a word of caution is probably not out of place.

Sowed Corn .- A patch of this, as heretofore recommended, will be found very useful in August and September, as the pastures fail. Sowed in drills, wide enough apart to admit the air and light, and cultivated two or three times, the amount of fodder which can be grown in this way on an acre of land is simply enormous; and the value of it for feeding milk cows, especially when combined with a little meal or mill stuff, can scarcely be over-estimated. It may be that corn sown broadcast and fed out when immature, is innutritious or even almost worthless, but grown in drills as we recommend and allowed to stand until the tassels begin to freely shed their pollen, it is one of the most convenient as well as profitable crops that can be raised at this time of the year for consumption on the farm.

Ruta Bagas.—These may be sown up to the middle of the month—for details as to management see last month's Furmer.

Flat Turnips may be sown from the 25th of this month to the middle of August. It is not too soon, however, to at once begin to prepare the land for them. Plough deep and harrow frequently, so as to produce a fine tilth. By sowing early there is a chance, in event of the first sowing failing, to make another. Sometimes the drought, or, escaping that, the fly will cut off the entire sowing. As soon as the plants come up a dusting (while the dew is on) of ashes, air-slaked lime, or plaster, will keep away the fly,—as

soon as they get into the rough leaf they are safe from its ravages. One pound of seed to the acre is sufficient. It should be mixed with sand to facilitate its being sown thin and evenly. The plants should early be thinned out so as to stand 6 to 9 inches apart, and when this is done they should be worked at the same time with the hoe; and this working should, if possible, be two or three times repeated. The soil for turnips is any good loamy land, though new ground is the best suited to them. A good large dose of stable manure, ploughed under, is a proper application to the land, and lime, ashes, bone dust or a good superphosphate, are all profitable ones.

We copy from the admirable pamphlet of the Messrs. Landreth the following estimate value of roots for feeding stock:

"For many years we have, in our various publications, especially 'The Rural Register and Almanac,' given expression to our conception of the value of roots as stock food. Our own working stock at present, numbering fifty-six head, and a small herd of Alderneys kept for the family dairy, we aim as regularly to supply with food of that character, whether it be turnips, mangolds, carrots or beets, as with hay; and we should consider it most unfortunate if untoward events should deprive us of the ability thus to contribute to the health and vigor of our working force, or the secretion of rich milk, and correspondingly rich butter, as high-colored in winter as that from grass, and almost as well flavored. That turnips singly and alone will secure health, and strength, and rich milk, we are far from maintaining; but we do contend, that in proper proportion, in suitable condition, at proper times, mixed with corn-meal, shorts, oil-cake or other farmaceous food, they will produce invaluable results. To feed roots of any kind in cold stables, or, what may sometimes be seen, in the open air in inclement weatherthe roots, perhaps, partially frozen-and expect favorable results, argues, to say the least, want of reflection; and where we find people say, as we sometimes do, they 'can see no good in roots,' we are sure to find, on inquiry, that some of the obviously rational and ne-cessary rules of procedure in feeding have been neglected or disregarded."

Root Crops.—All of these should be kept well worked, the soil being stirred as deeply as possible. Allow no weeds or grass to grow in the rows if it can be prevented; and as frequently as possible run the horse-hoe or cultivator through them.

Buckwheat may be sown any time this month. Sow 2 to 3 pecks of seed to the acre, harrow it in and roll. An application of 150 lbs, of bone dust or superphosphate will be almost sure to produce a crop on any ordinary land.

Timothy Meadows.—If these are to be set, the work should be done in August, but it is not now out of time to call attention to the matter and to say the 1 your field will be all the better for two mighings, which should be performed dec\_iy and thoroughly. After these, repeated harrowings and rollings bring the mechanical condition of the soil into a proper state for receiving the seed; and 20 bushels of ashes, 2 of salt and 150 lbs. of bone dust to the acre will, when well mixed and turned over once or twice, make a good manurial application for the purpose in view. From a peck to a peck and a half of seed is usually sown to the acre.

Fences.—See that these are kept in such a state as to exclude wandering cattle and hogs, whether your own or your neighbors'.

Live Stock.—All kinds need some attention now—the horses, mules and oxen, that they are regularly fed and watered, and if possible not overworked; sheep should be supplied with tar, over which salt is strewn, as a protection against the fly, which deposits the eggs from which the grubs or worms in the head are produced; hogs ought to receive green food, or have the run of a clover field.

Ploughing for Wheat.—This will take a good deal of time, generally, this month. Let it be done thoroughly, and such a tilth formed as will enable the soil to do full justice to the crop and the land owner. In this connection we give some suggestions below on lime and other fertilizers.

Lime. - Any soil deficient in lime, or in which this mineral is inert, must have an application of it, to produce good crops. The difference of opinion as to the action of lime is almost as great as that of plaster, but it is frequently found that an over-dose is applied on some soils-and land is known to have been rendered useless for years by an excessive use of lime We have before referred to experiments made by the then editor of the Farmer some twenty years or more gone by, in which lime was applied on plots of land, at the rate of from 10 to 100 bushels to the acre, and the result was proved to be that for the first crop, that on which the smallest quantity was applied, was found to have improved equally as much as that to which the largest dose had been given. This result was announced at the time, with the expectation that it would be met with ridicule, so great was the demand for, and application of, lime. at that period-but within the last two or three years, similar experiments were made in England by Prof Volcker, the eminent chemist of the Royal Agricultural Society, and the identical results were promulgated, which had years before been announced in our Farmer. This was also acknowledged to be the opinion of Prof. Emmons, in his report on the geological survey of North Carolina, an extract from which we gave in our volume for 1855, as follows: "If we may appeal to observation and experiment, it is established that a small per centage of lime only is necessary to the highest degree of fertility; and yet this small per centage IS NECESSARY. If there is present one-half of one per cent. it seems to be sufficient, for it is rare to find a larger quantity in productive soils." E. was perhaps the first to ascertain that some of the most productive soils for wheat in Western New York contain comparatively but little lime. In a rotation of four or five years, 40 to 50 bushels lime will suffice, for that period, to be renewed with another course—this where lime is not already in the soil, or, if there, in an inert state, the fresh dose will bring it into activity.

Superphosphate.-No one who has tested it, will doubt the value of a good superphosphate. As shown in our last, some manures are insoluble, and though very rich in phosphates, unless made into a superphosphate, by the application of sulphuric acid, they are apt to prove entirely ineffective. Let this fact be borne in mind. Bone dust, if fresh, contains ammonia as well as a large per centage of phosphates, and is an excep tion to this rule, and will, if ground tolerably fine, tell well on the first crop, and the particles not dissolved by the spring and summer heats, combined with the moisture of the earth, will give out their virtues by degrees, as putrefaction takes place, and will thus supply food to the plants upon the field to which it is applied, for years. We hold that bone dust should not be too coarse nor too fineif the former, there will not be enough of it ready for the plants for the first crop; in the latter case, what is called bone meal, is too fine, and lets off more of its virtues for the first crop than is necessary, and consequently a loss ensues-the medium quality contains a sufficiency of fine powder for the crop to which it is applied, and the larger particles will dissolve as rapidly as required in the subsequent crops. For an annual tenant, bone meal is the most profitable; but for the landholder, the medium fine is the most economical.

Ashes.—This article, if of wood, is one of the most valuable fertilizers that can be used, and it can hardly be misapplied—although particularly valuable for some crops, like tobacco and potatoes, yet there are few others but what will be benefitted by its use, and a crop of grain or grass will show its influence for more than a year or two, although on the first year they they may not appear to be so effective. If sown with wheat, in the drill, it should be mixed with plaster. It is excellent as a top-dressing for grass, and any amount, from 10 to 100 bushels per acre, will

be found to pay well. It would be the most effectual means of using ashes, to compost them with barn-yard manure or muck, or in combination with both, and also with phosphate of lime. It is calculated that 100 lbs. kainit (German salts) mixed with 25 lbs. fresh burned lime, and 400 lbs. woods earth, will make as valuable a dressing as the average hardwood ashes.

### The Apiary.

#### Feeding Bees.

D. L. Adair, the well known bee-keeper of Kentucky, says:—

"Five pounds sugar fed to a colony of bees in March and April will secure the return of fifty pounds of honey in June. There are more bees lost by starvation in early spring than from all other causes during the winter. As soon as the first food is carried into the hive in spring, the queen commences to lay her eggs; an unfavorable change in the weather, cutting off the supply of food, endangers the life of the whole colony. They should be fed to prevent this, and also to stimulate the queen as much as possible, so that they may be strong when honey becomes plentiful enough to gather a surplus.

"The ovaries of the queen bee contain the germs of about half a million of eggs, and when they are exhausted the queen dies. A prolific queen will lay them all in two years, while others take five or six years to accomplish it. The latter are unprofitable, and should be destroyed. A queen that is stimulated to lay to her utmost capacity during the first month of her laying will be prolific all her life, while one that is so situated or treated that she lays little or none during that time will likely be unprofitable as long as she lives and will live a long time."—Furmers' Union.

White Clover as a Honey Plant.—An English writer says: White or Dutch clover is the queen of honey plants. It is widely cultivated in this country, and continues to flower a long time. In Scotland, the farmers use more white clover seed in laying down the land in grass than the farmers of England, hence the clover-fields are better there than here. And the use of lime and bonedust, as manures, has a great influence in the production of clover. In traveling to Edinburg some years ago by the Caledonian line, whole fields, white with clover, caught my eye, and made me take a second look to see if the whiteness came from the daisy-flowers. Whole districts, unsurpassed for excellence, met my eye during a visit to my native land, many of which hardly ever received a complimentary visit from bees, and for the reason that there were no bee-keepers in these districts.

### Correspondence.

#### Our Monetary System.

Mesers. Editors of the American Farmer :

It seems somewhat remarkable that gentlemen of intelligence have not been able to perceive the object of these papers; which is not to give practical instruction to farmers in agriculture, but to bring to their aid, in a great crisis, the lights of true statesmanship. In the last number, a gentleman of large experience and information, almost in sight of the porticoes and academic groves of the University, has announced "a new departure," which you seem to herald as a probable satisfactory solution of the question that has so long engaged our attention. It would be a poor compliment to the intelligence of the reading farmers of Maryland and Virginia to suppose them entirely ignorant of any matter that seriously affects the interests of their profession, and which is known to the world of science. Upon this subject, therefore, there cannot be "a new departure,"—least of all can the rule, "pay as you go," be a new departure. It is at least as old, if not in precise words, in sense, as the writings of Foor Richard, and may probably be found in much earlier productions. It was brought distinctly to my attention a great many years ago, as quoted, in his peculiar manner, by John Ran-dolph, "The true philosopher's stone, air, may be found in four small monosyllables, 'pay as you go,"—and I cited the maxim as a pallia-tive in the very first of my communications. I agree so thoroughly with our friend, Mr. Gilmer, in regard to this rule, and have tried so hard to practice it, that I should be happy to agree with him as fully in regard to other matters. With Mr. G. I dislike to be egotistical, yet I have had sufficient experience in such writings to satisfy me that a different practice may proceed from affectation, and that essays entirely formal and didactic, which have no impress of the writer or his surroundings, are rarely either interesting or instruc-I have no space for details. I may say in a word, my practice has been the same as Mr. Gilmer's; our purchases of supplies being nearly all made in Baltimore, and almost invariably for cash.

I must say a word, too, in vindication of the people of this section of Virginia, which will apply, I have no doubt, to nearly the whole State, unless some few localities, now deemed fortunate, may be excepted. I have seen no such thing as extravagance since the war. I have not seen a bottle of French brandy, or a glass of wine, except domestic, in the house of any country gentleman, for more than ten years. A new silk or satin dress, worn by a Virginia lady in this neighborhood now, would excite quite as great a sensation as a coach and four, with outriders, would have done a few years ago. No, gentlemen! you and your correspondent have

unwittingly done our people, especially our women, great injustice. They are not and have never been extravagant. They have in the past produced descendants worthy of the best days of Rome or Sparta, and are destined in the future to be mothers of a race that shall be acknowledged by all the world of the

highest type of c:vilization.

Our people were not ruined by extravagance, either before or since the war. They came out of the war full of hope and energy, and most of them would ultimately have re claimed themselves if things had remained even as favorable as at the close of the war. Peace brought with it this terrible monetary system. Interest on mortgages went up to 12 per cent.; on notes, to 2½ per cent. a month, and land, the only property we had to sell, came down to a third or a fourth of its former value, and now can scarcely be sold for cash at any price. Is it wonderful that the people were ruined, were insolvent? Some were very slow in coming to this disagreeable conclusion—others took timely warning and availed themselves of the mercies of the denounced bankrupt law-which, I am free to declare, is, under all the circumstances, the most wise, just and humane law that has ever passed Congress—saving at once a great com-monwealth from obliteration and a whole people from ruin. A kind Providence has sent us this great boon, and yet some of our people would, from false pride or perverse will, reject this God-sent act of statesmanship. Upon a question of such delicacy each citizen must act for himself; but it seems to me, that as soon as a man knows himself to be insolvent, he has no alternative but to go into bankruptcy. He owes this sacrifice of feeling to his family, his State and to such creditors as he can and should pay. This only can save the commonwealth, which must otherwise realize the terrible prediction of the great prophet, "Your country is desolate, your cities are burned with fire; your land strangers devour it in your presence; and it is desolate as overthrown by strangers.

This great and beneficent measure, which must be regarded as springing from the mind of the whole people, has already shed a ray of light on many a gloomy homestead, broken the fetters of industry, and put thousands of idle hands to work, to increase the public wealth and general prosperity. The success of this measure should convince the people that their will, made known to public men, without regard to party, will always be respected. It will give great relief, but its effects cannot be compared with the contemplated reform in our monetary system, which requires only a calm expression of the public will to induce its speedy adoption. Unfortunately, great political, are said to be opposed to the public, interests. It is said that nearly one hundred members of Congress are presidents of, or nearly connected with, the national banks. These relations are incompatible, and if they exist, it will be easy for their constituents to let their representatives know,

in a friendly spirit, that they must cease. The great moneyed interests, in all the cities and towns, is supposed to be also against us. with eight-tenths, at least, of the people favorable to reform, they must be weak indeed if the measure is not carried. The only danger is, that designing men may force it into party issues. This by all means should be avoided. Every citizen has the same interest in it, no matter what may be his party connexions. The good sense and moderation of the whole country should resist such an effort. The good sense and moderation of

The return to SPECIE PAYMENTS,—the time and the mode,-is the great question that will continue to agitate the public mind, until it shall be satisfactorily solved. A general fallacy has prevailed as to the effects of specie payments, and doubtless still exists in many minds. It was believed at the close of the war that we had a greatly redundant currency, and that as soon as business became settled the price of land and other property would rise rapidly, and we should be able to pay the oppressive private debts in a depre-ciated currency. This was a great delusion, and many persons seem not yet to comprehend the cause of their disappointment. The subject has been fully explained by H. C. Carey, of Philadelphia, Charles Moran, of N. York, and other writers of reputation. insist, that so far from being redundant, the currency of the whole country was greatly deficient; that whilst England had twentyfive dollars, and France thirty dollars to each inhabitant, this country had only twelve dollars and a half to each inhabitant! This deficiency is far greater in the South, and in the producing States generally, than in the manufacturing and commercial States. Virginia. before the war, had about eleven millions of banking capital; and the commonwealth and the principal corporations issued Treasury notes, which added considerably to the circulating money, which with the gold and silver coin, then part of the currency and not a commodity, swelled the volume of her currency to fully five times the amount of the national bank notes, circulating within her borders at any time since the war. Of the national bank capital, actually paid in, Vir-ginia has \$3,870,000; of notes in circulation, \$3,300,012; of population, 1.225,163, or about \$2.50 to the inhabitant! Massachusetts has of banking capital \$88,072,000; New York, \$113,140,741; Pennsylvania, \$51,780,240. Discarding fractions, it will be perceived that these three States have absorbed greatly more than one-half of the whole banking capital of the U. States, the whole amount paid in being \$462,518,601. Can it be believed that the voting people of the U. States will be willing to submit longer to this gross in-equality and injustice! It is believed by the best financiers that the profits of these banks have been fully 30 per cent., whilst the gains to the section wielding this enormous power, defy calculation.

I am for the resumption of specie payments in good faith, founded on the great resources

of the government and the solid wealth of the whole country; and not upon two thousand so-called national banks, many of which have salary of the President, and lang upon the skirts of the government, affecting to uphold

it, when in fact it sustains them.

No man of candor and intelligence can read the able and dignified arguments of the opposing members of Gen. Washington's first cabinet, on the power to establish an U.S. Bank, without the highest admiration of the men of that day; and whatever may have been his own conclusions on the subject, he will readily take the liberal view of Judge Marshall, and "will charge neither the advo-cates nor the opponents of this measure with insincerity, nor with being knowingly actuated by motives which might not have been avowed. That was a proposition to charter one U. S. bank, an institution of large capital and of sufficient dignity to give great aid to the government in the management of its finances. The proposition now is to legitimatize nearly two thousand national banks, that were brought into being by the exigencies of war, and in time of peace cannot be defended upon any constitutional principle. If there were now no objection to the resumption of specie payments, by the honest old plan of paying what you profess to pay, the country and the world would never have confidence in the success of a measure which complicates the credit of the government with such a system. Nor would the States ever consent to be deprived of their unquestioned right to establish their own banks, by an arbitrary usurpation of the rights and powers that justly belong to them. Confidence is absolutely necessary to the resumption and maintenance of specie payments. Can confidence exist, founded on the war system of national banks, which as an original peace measure would be regarded as so supremely ridiculous and absurd, as to meet the appro-bation of no sane man? One of the last patriotic breathings of the late Chief Justice. was the wish that he might live to see the constitutional truth accepted, that Congress has no power to make anything but gold and silver a legal tender. Yet there lies at the very foundation of the Senate's bill for redemption the declaration: "That on the 1st day of January, 1874, the Secretary of the Treasury is authorized and required to pay, on demand, at the office of the Assistant T surer in the city of New York, to any holder of U. States notes to the amount of \$1000, or any multiple thereof, in exchange for such notes, an equal amount of the gold coin of the United States; or, in lieu of coin, he may, at his option, issue in exchange for said notes an equal amount of coupon or registered bonds of the United States, in such form as he may prescribe, and of denominations of fifty dollars, or some multiple of that sum, redeemable in coin of the present standard value, at the pleasure of the United States, after ten years from the date of their issue, and

bearing interest, payable quarterly in such coin, at the rate of five per cent. per annum," and this further declaration: "That all banking associations which shall, on and after January, 1874, redeem their notes at such localities as are now or as may be hereafter designated by law, either in coin or in United States legal tender notes, shall be exempt from the requirement under existing law as to holding a reserve of lawful money of the United States." And this is called resumption! The tone of the press, whenever it speaks at all, shows that such a system cannot have the public confidence; among others of the same sort, in other papers, I find the following strong expression of opinion in the N. York Tribune:

"Witness, too, the fluctuations in our money markets for weeks past, the uncertainty of all legitimate trade and commerce, and the consequent damage to the industrial and business interests of the country, with the increase of feverish and unhealthy speculation, all tending to degrade honest labor and destroy public confidence. The mischief of it is too plain to need any demonstration. There is no excuse for it. If our present currency is the outgrowth of the war, it is not necessary to continue it or make it perpetual. Its originators had no idea that it was anything more

than a temporary expedient." But if there were no other objection to the Senate's scheme, but the substitution of the unconstitutional national banks for the legitimate State banks, which are older than the constitution itself, that alone would be fatal to its success. The State banks of N. York and Massachusetts were chartered by those States during the Old Confederacy, the old Bank of Maryland was chartered in 1790, and from that time to the commencement of the late war, it is believed that there was never a year that one or more State banks were not chartered. In his argument before the cabinet in favor of a U.S. Bank, Hamilton alludes to these banks as existing institutions, and the power to establish them was never questioned by him or any other statesman, unless it may have been by Col. Benton in one of his eccentric bullion speeches, of which I have an indistinct recollection. The State banks are far too valuable to be discarded. Upon a return to specie payments we shall have our share of the coin as a currency; the present banking capital would not be annihilated, and its owners would probably find it to their interest to keep it here, to be employed in State banks; and by collecting, as in a reservoir, the little rivulets that have run to waste, we, with increased production, would have power to establish a few experimental banks on the Scotch principle, for the benefit of the farmers.

And now, gentlemen, by way of conclusion, I must say, that I have never held out a hope that I, by any effort of mine, or of any other unorganized individuals would be able to answer satisfactorily the question "what shall we do?" So far from it, I expressly

stated in the May number for 1872, "my experiments have been tentative to bring us to this point in the inquiry, 'a universal social evil produced by society, can only be remedied by society." I have done my best to enlighten the public mind, and to bring about the desired results; perhaps with no more effect than the fly, which lights on the wheel of a moving cart, and flatters himself that he is the propelling power. It has, however, I think, been answered by one great mensure, already adopted—the bankrupt law; and in due time will be answered by another still more important measure, the RESUMPTION OF SPECIE PAYMENTS, that will soon be adopted on sound principles, by common consent.

WILLOUGHBY NEWTON.

Linden, Westmoreland Co., Va., June 3, 1873.

#### Tobacco Culture in New England-No. 6.

To the Editors of the American Farmer:

In growing a crop of tobacco the best practical talent is brought into requisition in order to produce the very largest possible amount of leaf, of the best quality, from every plant; inferior leaves are not accounted, except as incidental to the crop; still such are allowed to come to maturity with the plant, after topping. The ground leaves, primings, or such as are pulled off by Southern growers, are, with us, considered valuable in helping to mature the whole plant, as well as a protection to leaves above of more value-they keep others free from dirt which the rains spatter on; also, if broken off, they wound the plant to the detriment of the rest of the leaves; and finally, they are of too much market value to throw away, especially as they are essential to the perfect maturity of the plant; for some years past they have sold at from five to eight cents per pound, and are known as "fillers" in our market reports. It is true the amount of these leaves is small in quantity to the acre from well grown tobacco, and the sum received small, but all large amounts are made up of units, which, if not saved, the large fortunes never accumulate. Tobacco is that variety of earth-product which is cultivated and valuable only for its leaves, and the more perfect, in all respects, these are, the greater the value of the product; for this reason it is, then, that our best growers take such extra pains to obtain the most large. well-developed leaves, without any injury thereto, while growing, harvesting, or afterwards; for as certain as the leaf is bruised, torn or broken, at any stage of growth, or before curing, the injury never grows less, but is worse when the tobacco is cured. To obtain the largest and best leaf is the reason for topping, which was treated of in the last number of this series published. Topping tends to check the upward growth of the plant, but it still seeks to elongate its growth by throwing out branches at the axis of the top leaves at first, then, after awhile, lower down on the plant; this leads to

SUCKERING .- As it is the object to obtain the largest and best growth of leaf, growth must be turned or directed as much thereto as possible by culture; and anything that diverts the growth acts to the detriment of the cultivator's hopes. The growth, free and unrestrained, of these branches, or suckers as called, absorbs matter which should be directed into the growth of the leaves, and they grow but little, while their texture is hardened and impaired, making it, when cured, very much less valuable; for these and other reasons it is found best to keep these suckers broken off as fast as they show themselves. By a wonderful provision of nature plants are endowed with certain qualities of self-perpetuation, and some hold these qualities with what in the human race we should style pertinacity; the tobacco plant is one of these. At the axil of each leaf is a main bud, and on either side of this are auxiliary buds, thus providing for accidents; now, if the plant loses its top, the first act is to start into growth the main bud nearest the point of fracture, then others lower down; if the growth from the main bud be broken off, one or more of the auxiliary ones start out to supply the defect; this is the case with the tobacco plant from the point where its top is broken off to the bottom leaf, and under some circumstances each leaf axil might send out as many branches as there were developed or dormant buds, but it is found that the leaves of the plant are so fully developed that further growth would only injure the quality before all the principal buds have made any material growth, to the bottom of the plant; sometimes it is the case that the buds at the bottom leaves make a few inches growth, when they must be all broken off clean. In case of this growth of suckers it is only as the plant makes its last effort, and the leaves will be found to be mature or ripe, and it is cut at once. It is found most eco-nomical to break out the suckers as fast as they make sufficient growth to be gotten hold of with the thumb and finger, and often by rubbing them off with the finger alone. the suckers are allowed to grow, as is sometimes the case, to get to the size of the finger, and begin to show blossom, the leaf growth loses, and in breaking them out the leaves are made to suffer; there is a large wound at the axil, which when it rains catches water to soak in and cause disease and decay, perhaps falling of the leaf; and such large suckers cannot well be broken off without cracking the leaf stem, or in some other way injuring the leaf or main stem of the plant. It is the main aim of our growers to keep the suckers from obtaining more than three or four inches growth before they are broken off, but where the quantity grown is considerable, it requires a good deal of work and time-but it is questionable as to its taking more than if the anckers get a large growth and are then broken off-but sometimes help sufficient is not provided, or some unprovided for occurrence prevents the timely suckering, and then it must be done at the best. There are no suckers left on the plant, when cut, to be hung with it in the curing barn, for the sap in the stalk induces growth, and this acts to the detriment of perfect curing, and when stripping the suckers hinder much, if they do not rot the portion of leaf they come in contact with. Suckering tobacco is a nauseating, backaching job, and one we are glad to get rid of, and sometimes are inclined to neglect it, but we cannot cheat the product to the amount of one cent, but are always rewarded according to the thoroughness of the labor.

W. H. WHITE.

#### The Necessities of the Hour.

Messrs. Editors American Farmer :

It was my intention to prepare an article for the next number of the Farmer on the bad tillage or system of land-working simply, but I shall defer that for another time.

The question "What shall we do?" suggests

The question "What shall we do?" suggests many things to the mind, some of which should be done at this present time, or it may be they will not be done at all by us. A few

of these I will note.

The change in the labor system of the Southern States has thrown a great deal of land out of cultivation, and the consequence is, that land is very cheap. It is within the reach of all to purchase land in large or small quantities, as the case may be, and I consider now is the best time for young men to buy farms and settle down upon them and go to work. In this way many of the large estates will be divided, so that almost every one will become a landholder and become interested in landed property. In this way much of the surplus lands will find ready sale and at good prices. This being done, the improvement of the land will claim the attention of these new landholders. This can only be effected by thorough tillage, rotation of crops, thorough manuring, and proper rest for the land. To farm with a view of increasing the permanent fertility of the soil (and we should cultivate our lands with no other view, if we wish ever to become independent and easy in our circumstances) we should use bought manures as sparingly as possible. And never then upon crops in field culture. This mode of culture I believe is wrong because it imposes an enormous tax upon the farmer or planter, and leaves his land in a worse condition than before. And for the further reason, it is impossible for the farmer to improve his land in this way. We have now been using these manures for at least twenty years, and our lands are decidedly poorer now than before we began their use. But this is not all. The farmer, instead of turning his undivided attention to permanently improving his land, learn s to rely upon these manures as supplying the deficiency of fertility in the soil. Besides the improvement of the land, though most important, and claiming the especial attention of the farmer, there are other improvements which claim it as well. To these he should

direct his attention, as they will conduce not only to his personal and domestic comfort. but add greatly to the value of his farm. His residence should be located with respect to a commanding view of the whole farm, in a conspicuous place, convenient to water, woods, &c. An orchard should be planted of the very best fruits, in order to have fruit all the

year, if possible.

But there is another subject which will soon claim universal attention, if it does not now already-the forest trees and timber lands are fast disappearing-so much so that on many farms there are not enough for building purposes and other uses of the farm. We have been certainly very wasteful of our timber and destroyed our forests to no purpose, and in a few decades more I would not be surprised if compulsory laws were not enacted in regard to this very matter, requiring plant-ing of forest trees. The prudent farmer should plant a considerable portion of his farm down in the best and most useful kinds of timber trees, as the demand for them is now great and rapidly increasing. In doing so, he is improving his farm and adding to its value, perhaps, to an extent of which he may not now have any conception. The best bank in which a farmer can invest his surplus money is on his farm. Here it is safe, and will pay him back at compound interest.

But there are some other things the farmer We all should take some agriculshould do. tural journal and organize agricultural clubs. This is one way of improving the farm and ourselves as well If a man does not improve his mind and become intelligent, he will never improve his farm. I regard a good agricultural journal, such as the American Farmer, just as necessary on the farm as the plough, the ox and the horse. And my reason is this, take any man at random, put the Farmer in his hands, and let him diligently and attentively read it for twelve months, and before the year is out he will want to be a farmer, and before the end of the second year he will have a farm if he can get it. I assert this upon that law of our being which puts us in sympathy with whatever we are in association. The Apostle recognizes the same principle when he says, "evil communications corrupt good manners." This is one way to manufacture farmers, if I may be allowed the use of such an expression. And therefore, as they will be intelligent farmers, and as all intelligent farmers improve their farms, so it necessarily follows that any one good agricul-tural journal on the farm is one means of improving that farm.

Now, as the question is put, "What shall we do?" my answer is, let us do these things. And as attending to these very important necessary matters will tend to place the farming community in an independent position and relation to the communities of other trades and professions. When we shall have brought our lands to that state of fertility and

we can hold at command boards of trade, mercantile rings, control the railroad despotism. put the monetary system in a good, sound condition, and remedy many other evils.

Calvert Co., Md., May 9, 1873.

#### The Application of Fertilizers.

To the Editors of the American Farmer:

In walking over the farm of one of your subscribers, a few weeks since, my attention was called to a field of wheat which had been put in with a drill, with manure attachment. Artificial manure was put on with seed at the rate of something less than 200 lbs. to the acre, but from some cause the drill did not distribute the manure regularly-from two to four rows being omitted nearly the whole time, and the crop shows it distinctly enough almost to the blade; where the manure did not run. the plant is very poor indeed, whilst the rows upon which the manure did run looks healthy and good, so that looking across the rows the crop appears to be even and good, but longitudinally it is badly striped; we hope to be able to notice the effect of this manure upon the vield at harvest.

Another field sown broadcast, in a rather rough condition, so that the manure fell into the hollows and has caused the wheat to bunch a little, but altogther bids fair to make a magnificent crop. The manure for these a magnificent crop. two fields was obtained of two houses in Baltimore, and certainly speaks well for their reputation. We think it would prove advantageous to farmers, generally, if they would try different kinds of fertilizers to prove them, carefully noting the results and sending an account of them to the editors of the Farmer. Such experiments, by practical men, would be very satisfactory to the readers of this periodical, and would, we doubt not, in many instances, prove highly beneficial. Let any of your readers endeavor to realize what time would be gained, what a stock of information might be thus obtained, if each one does his duty in the matter. Lend a hand brother agriculturists and horticulturists, and while helping ourselves assist each other with the knowledge thus acquired. Very respectfully,

#### Furze-Silk Culture.

To the Editors of the American Farmer:

The winter has been very severe in our mountains; the thermometer was several times 30° below zero, which leaves us minus a peach crop, and at places minus peach trees altogether. Wheat looks well throughout Frederick county, but rye is less promising. Most farmers are late putting in their corn the season however being favorable now, all hope for a good corn crop.

My first trial of the Furze turns out a deproductiveness that we can more than supply, elded failure. On the 10th of April I sowed in every particular, home consumption, then an acre of it on well prepared high ground, but it did not come up. Very probably the continuous cold rains rotted the seed in the ground. I will surely try it again next sea-

son, hoping for better luck.

With great interest I have read the several articles you wrote on Silk raising. As this branch of industry supports thousands of small landowners in France, Italy, Spain, South Germany, Turkey, Persia, and many millions of people in China and Japan, it is worth our while to look a little closer into this matter, and neither originate a new morus multicaulis fever nor discourage honest industry. What little experience I have in this line dates back as far as 1833, when I was a boy of 12 years of age, living at that time in Berlin, Prussia. I raised silk-worms in my little study, getting the mulberry leaves from a neighboring grave-yard, and sold the few cocoons I raised to a silk-spinning establishment, thereby making a few pennies, pocket money. I never practiced it afterwards. However, I kept up with the times by reading occasionally works written on the subject. Of late, a most elaborate and interesting German work was sent me, styled "The Mulberry-tree Spinner-the mode of raising the insect and its various diseases," by Fr. Haberlandt, Prof. and Leader of the Imperial Austrian Trial Station for Silk Raising, at Gorz, Illyria. Let me give you a short synopsis of this most important and meritorious work, in which the author not only describes the more generally known manipulations of raising the insect and bringing the cocoons and eggs to market, but gives its anatomy, physiology, the different stages of its development, and most important of all, their various diseases, the causes which originate them, and their prevention. It is indeed a safe guide for the practical silk raiser, to avoid losses and raise rich crops of silk.

The first requisite of the silk raiser is a powerful combined microscope, (worth about \$50,) to search and scrutinize the condition of the eggs (grains.) If more than 5 per cent. of a certain portion are diseased, the eggs must be burned, to prevent the spreading of the infection. Every pair of the butterflies ought to be searched in regard to their health, and only perfectly sound pairs are to be left to breed, and saved from infection by putting them in small gauze bags, out of which the eggs are washed, and again scrutinized, and either accepted or condemned. The bodies of the dead butterflies after the eggs are deposited must be burned. The only country from which perfectly sound eggs may be imported is Japan. The author treats successive.

sively the following chapters:

The egg and its appearance under the microscope. The wintering of the eggs. The proper mode of, and the proper time for, hatching. The caterpillar (silk-worm)—its complete anatomy and physiology. The mode of feeding and taking care of the worm. Temperature and ventilation of the silkery. Utmost cleanliness strictly necessary. All dead matter and the undevoured leaves must

be burned. The spinning process of the worm and the apparatus necessary. Description of the cocoon and an efficient manner of killing the enclosed chrysalis. Microscopical description of the raw silk thread and its chemical properties. The breeding process in small gauze bags. Of the different races of the silk-worm and the possible chances of crossbreeding. The various diseases of the worm, (a rather formidable array,) the spread of which can be prevented by the use of the microscope in selecting eggs and sound parent stock. Finally, the different enemies of the silk-worm—rats, mice, ants, etc.

I am willing (for a reasonable consideration) to translate this work into the English language, for any publisher who should wish to reprint it in this country, and append, besides, a few short essays from French writers on the subject. Fr. Haberlandt's work contains 247 pages, and is beautifully interspersed with numerous engravings, representing the result of the microscopical researches.

From other sources I add a few remarks about mulberry trees. Morus multicaulis is undoubtedly the best for feeding the worms, and can be most profitably raised as standards, but it requires good ground, and is very susceptible of frost. In bush form, when 8 years old, it will yield from 10 to 20 pounds of leaves per year, while as a standard it will yield from 60 to 120 pounds when 16 years old. Morus moretti grows faster and yields more leaves. The safest to raise is the Chinese or Lou Morus alba, which grows even in the poorest soil, and withstands any degree of frost; it is generally raised in bush form. Next after this is ranked the white Italian mulberry tree (morus alba.) All mulberry plantations intended for silk-worm feeding require cultivation and manuring. Let me conclude, then, with the remark that of late French chemists have been trying their best to produce the raw silk, by chemical process, out of the mulberry leaves, but failed in the attempt, as it is ordained that nature's hidden processes no mortal eye ever shall view.

Truly yours, A. Jackson. Frederick, Md., June, 1873.

#### The Tare or Vetch.

To the Editors of the American Farmer :

Some little interest has been manifested in late numbers of the Farmer respecting the Tares or Vetches. As soon after the harvest is over as possible—in fact sometimes before it is finished—the ploughs are put to work on a piece of wheat stubble, breaking about six inches deep, the ground is worked and the acres sown, no matter how dry it may be—all the better for the dust blowing a bit when acres are sown! The clod-crusher is a very useful implement about this time. Quantity of seed to the acre two to two and a half bushels; some farmers make a practice of sowing a peck of rye to the acre with the tares. Cutting for soiling purposes commences as

soon as they show a little bloom. A sufficient area is usually sown to feed the stock until the clover is fit to commence, and by that time the tares have usually commenced to seed. The ground is broken up as fast as cleared of tares and sown to white turnips for sheep feed. When cut for hay, the tares are usually cut just as the first seed pods are forming, but are very little used for that purpose so far as our experience goes. We do not consider them equal to clover for hay, by any means, and far inferior to the fine old meadow hav. One good shower when about half made into hay is sufficient to spoil it, making it miserably dusty and altogether unfit for horse feed. We think tares should be tried South of Baltimore. A little rye mixed with them would be an advantage. One item-an important one by the way—I have omitted; there is usually some manure left after the root crop is put in, some also accumulates during the summer, and the whole of this is applied to the land for tares or vetches, as usually called. The vetches are taken off the land as a green crop. The turnip crop which follows is eaten off by sheep. It will thus be readily seen by the readers of the Furmer what a quantity of feed is thus obtained and how little the land is exhausted thereby. The above is the English plan. N. F. F.

#### The Tare or Vetch.

To the Editors of the American Furmer:

Gentlemen:—In the May number of the American Farmer a note was added to an article, "The Tare or Vetch." I would remark that I planted a package of seed, received from the Agricultural Department, marked "Vetch," and I am unable to discover any difference in the blossom, leaf, or habit of vine, from what we know here as the partridge pea,—a vine valuable for forage, and not to be overlooked as a fertilizer,—yet an unwelcome intruder in strawberry culture; and from the use of wheat screenings in poultry feeding, I conclude there are wheat sections full well acquainted with the same vine.

Respectfully, G. F. B. LEIGHTON. Norfolk, Va., May 26, 1873.

#### Dairy Farm Wanted.

[The annexed letter from a subscriber to the American Farmer in Vermont, will explain itself. There are doubtless many sections which combine all the requisites named by the writer, and persons having land suitable for his purposes for sale, might do themselves and him a service by writing him on the subject.—Eds. A. F.]

Editors of the American Farmer :

I have for some time contemplated removal to a warmer latitude, our rigorous Vermont winters being too trying to my constitution. Here my business is with the butter dairy, and this, combined with breeding choice dairy stock, is that in which I prefer to engage. Will you be so kind as to inform me what part of Maryland or Virginia is best adapted to this pursuit, the essentials to success in dairying being taken into consideration: an abundance of sweet, nutritious grass, pure water, a soil naturally fertile for the production of soiling crops, and last, but not least, facilities for getting produce to market and cheap corn from the West?

If I understand the matter right, there is at present but little attention paid to the dairy in the States above mentioned, but I can see no reason why the grass producing regions of the South cannot be made to equal if not surpass the North in dairy products. Here at the North some special crops, requiring considerable labor and manure, can often be advantageously combined with the dairy, could a locality be found favorable for the production of choice fruit and still meet the other requirements.

Will you favor me with a description (with price) of some of the farms intrusted to your

care, for sale.

Lately I have been examining statistics of crops as given in the Report of the Department of Agriculture, showing the average yield of staple products in the several States. For the sake of comparison I copy the figures as given for Virginia and Vermont:

Virginia-bus. pr. acre.	Vermont-bus. pr. acre.
Corn22.6	Corn
Wheat 8.0	Wheat 16.6
Oats 16.4	Oats
Potatoes71.0	Potatoes 160.0
Haytons, 1.21	Haytons, 1.02

Am I correct in assuming that this great difference is due more to improper culture than to barrenness of soil?

Yours, very truly, A. O. BAYLEY. Derby, Vt., May 18, 1873.

REFUSE OF TANNERIES.—A correspondent in Monroe county, Pa., writes to the Country Gentleman, as follows:—We use much of it here, and consider it a valuable fertilizer. We pay \$1 to \$1.25 per ton for it, and haul sometimes two or three miles. Our land is what is called heavy soil, although I have seen it used with good results on the "sandy flats" along the streams. We haul and spread from the wagon, four or five tons to the acre. It is generally applied on the ploughed ground, and worked in by cross-ploughing and harrowing. It does best on new land, when sown to clover, yielding heavy crops, and the opinion here is that lands treated with this manure keep in grass longer than with any other manure which can be applied.

We recently had a visit from a gentleman who has purchased a marl bed in Prince George's Co., Md., near Upper Marlboro', paying for some 35 acres about \$40,000. He informs us—that an analysis shows it richer in potash than any marl deposit known.

### Liorticulture.

#### American Pomological Society.

We have received from President Wilder, of this Society, a circular containing an invitation to Fruit growers and Florists to attend its 25th annual meeting at Boston on the 10th Sept., 1873. It will be a grand occasion, the great Flower and Plant Show of the Massachusetts Horticultural Society coming at the same time, and the Music Hall is to be used in connection with the Halls of the Horticultural Society, at whose invitation this great celebration is held at Boston.

The work of the Pomological Society, carrying its influence into every State in the country and the British Provinces, has been beyond all question, the most important that has ever been done by any similar association; and this occasion is to be a fitting crown of all its efforts for the benefit of American Fruit It is the first National Pomological Growers. Society of which we have any knowledge, and its example has been followed in the establishment of similar societies in England, France, Germany, Belgium and other countries. catalogue embraces the names of fruits adapted to each section of our widely exten-ded country, and it is revised and corrected at every session, adding such new fruits as may be desirable, settling disputed points of nomenclature, and has become the acknowledged standard of American Pomology.

It must be extremely gratifying to the first President of the Society, who has labored so hard and so long, and who still occupies the chair, Hon. Marshall P. Wilder, that he has been permitted to live to see its growth and prosperity, and to welcome the leading fruit growers of the country to his own home

on this grand national occasion.

The Circular says :-

"All Horticultural, Pomological, Agricultural, and other kindred associations in the United States and British Provinces, are invited to send delegations as large as they may deem expedient, and all persons interested in the cultivation of fruits, are invited to be present and take seats in the Convention.

The coming session will be especially interesting, commemorating, as it will, the termination of the first quarter of a century of the existence of the Society, and it is believed, will be one of the most important and useful that the Society has ever held. On this occasion there will be brought together the best cultivators and fruits of our widely extended country, when may be examined and compared, the fruits, not only of the cooler climes of the north, but of the south, the west, and the Pacific Slope. It is therefore very desirable that every State, territory, and province of America should be fully and ably represent-

ed in this Convention, thereby promoting the advancement of one of the great resources of our national wealth—the extension and perpetuation of the amicable and social relations which have heretofore existed among the members of the Society—and the diffusion throughout the land, of our deliberations, for the benefit of our constantly expanding terri-

tory.

It is therefore hoped that there will be a full attendance of delegates from all quarters of our country, thereby stimulating more extensive cultivation by the concentrated information and experience of cultivators, and aiding the Society in perfecting its Catalogue of Fruits. This will be one of the prominent subjects which will come before the Society, and we therefore respectfully urge the various State and local committees, which have not already responded to the circulars of P. Barry, (Chairman of the General Fruit Committees, Rochester, N. Y...) to do so, with such information and lists of fruits as may aid in determining what varieties are best adapted to their several localities."

#### Norfolk (Va.) Pomological and Horticultural Society.

The 5th annual meeting of this Society was held at the beautiful residence of the President, Mr. Leighton, on 5th May. A full report of the proceedings is given in the Norfolk Virginian. On taking the chair, the President delivered a brief address, in which, after welcoming the company, among which were two English gentlemen, he went on to review the condition and prospects of the Society, and to give some valuable facts ascertained in his experiments as a fruit grower. He spoke especially of pear culture, and stated that in this climate the longer duration of hot weather rendered it necessary to trim his trees very sparingly, and he admonished pear growers against adopting a system which, while suited to the latitude of the North, was injurious in this region. He then said that he had an important suggestion to make, which he hoped would be acted on by the Society. He thought it of great importance to form a Southern Pomological and Horticultural Society to act as an auxiliary to the Parent Association-the American Pomological Society-and he hoped to see others organized for all the grand geographical divisions of the country. He submitted the matter to the Society and left them to judge the value of his suggestion.

Gen. Page cordially approved of the suggestion for the formation of an auxiliary Society for the purposes indicated in the remarks of Mr. Leighton, and a committee was ap-

pointed, of which Gen. Page was selected as chairman, to report resolutions to that effect—which, when presented to the meeting, were unanimously adopted as given below, and Messra. Wm. Denby, W. H. Lovitt, Hon. J. B. Whitehead, Gen. R. L. Page, Capt. Jos. Spratley and G. R. Wilson were appointed delegates. On motion, the President was added:—

Whereas, our changed system of labor, the annually increasing growth of cereals in the West, and the tendency towards enlarged cotton planting, indicate an approaching change in our agricultural system; and whereas, a diversity of industries is at all times of advantage to the farmer and planter; and whereas, the States of the South, stretching from the temperate to the semi-tropical latitudes, offer a magnificient field for the pomologist who can grow fruits ranging from the apples of the Border States to the oranges of those lying on the Gulf; and whereas, their cultivation, as General Washington said of husbandry, is "honorable, amusing, and with judicious management, profitable;" therefore be it.

1st. Resolved, That we, the members of the Norfolk Horticultural and Pomological Society, do call upon all similar organizations throughout the South to unite with us in forming a Pomological and Horticultural Society for the Southern States, to be auxiliary to the American Pomological Society.

2d. That we invite our fellow citizens of the Southern States to form Societies similar to ours in every county of every State.

3d. That we request all existing associations to send delegates to a convention to be held in the city of Norfolk on the 20th of August next, at which date we will be prepared to unite with them in the formation of a constitution for the said society, and will endeavor to show them the results we have achieved here in pomology and horticulture.

4th. That copies of these resolutions be sent to the Governors of all the Southern States, to their members of Congress, editors and all organizations akin to ours, with the request that they will give us their sympathy and support in perfecting an organization, which, if formed, will become, in our judgment, a benefaction to the South.

An address was then delivered by Capt. Hope, on "Gen. Washington's system of Farming."

On motion of Hon. J. B. Whitehead, Captain Hope was requested to furnish a copy of his notes for publication, and the thanks of the Society were voted for the address. The meeting adjourned till October, and sat down to dinner, where sentiments were offered and speeches made; and the day was spent charmingly among the thousands of fruit trees and the blooming roses, and has been marked with a white stone by all who enjoyed Mr. Leighton's elegant hospitality.

PEARS.-At a meeting of the Western N. Y. Fruit Growers' Association, Mr. Elliott said that he had hundreds of applications for an answer to the question, What are the most profitable as well as good varieties of pears to plant, looking forward to only good ordinary care in cultivation?' At this present time there are probably over 1000 varieties of pears named and described. "I have myself notes and observations of over 800, either fruited by myself or examined specimens grown by my After giving a special notice to friends." some dozen or so of pears, Mr. E. who has for 20 years been interested in the subject of pear raising, enumerated among the pears he recommended for his location the following varieties:—St. Crispin, Flemish Beauty, Loriol de Barney, Duchesse Pricoce, Depierre, Doyenne Boussock, the Lawrence, Howell, Beurre Clairgeau, Compte de Flandre, Beurre Diel, Beurre D'Anjou, Duchesse D'Angouleme, Beurre Bosc, White Dovenne, Goodale, Maria Louise, D'Uccle, Marechal de la Cour, Josephine de Malines, Winter Nelis, Vicar of Winkfield, Louise Vilmorin, Therese Appert, St. Therese and Belle Epine Dumas.

#### Vegetable Garden-Work for July.

The earlier crops have been gathered and those planted late begin to come in, and ought to continue in a well managed garden to give a constant supply of fresh vegetables from now until frost stops their growth. As quickly as one crop is out of the way endeavor to replace it by some other, that the ground may not be idle, and become a nursery for weeds.

During the very hot weather vegetable growth is slow; but the necessity is greater for a constant use of the hoe and the cultivator. By finely pulverizing the upper stratum of soil it acts efficiently as a mulch for the earth beneath, retaining the moisture needed by the roots; and the weeds which are not uprooted and exposed to the air quickly wither and die.

Bush Beans may be still planted for late crops. Late Cabbages and Cauliflowers are to be set out. Celery is now to be put out. Many stick to the old plan of digging trenches in which the plants are set, whilst some put them on the surface and draw the earth up to them. The former plan is more convenient for watering and for filling in with earth for blanching, and is the mode generally practiced still, we believe, in private gardens. Beets may be sown for winter use, and earlier crops of them. Carrots and Pursnips should be worked until the leaves interfere with the hoe. Corn is to be planted for a succession, and that already in should be frequently hoed. Cucumbers are to be sown for pickles. Plants need frequent workings and liberal supplies of liquid manure. Keep Melons well stirred around. Sow Peas for a late supply, in a cool place, but do not expect large returns. Let Squash vines root at the joints, but pinch off the shoots when growing too strongly. Give Tomatoes some support if practicable,

look out for the green worms on them, and keep them well hoed. Turnips may be sown for winter use.

Keep down the weeds if it can be done—attack them before they scatter or mature their seeds,—and by the rake and hoe continue to destroy them as soon as they show their heads.

### The Dairy.

#### Managing a Dairy Establishment.

The Hon. Harris Lewis, of Herkimer Co., N. Y., acknowledged to be one of the best authorities on dairying in the U. S., thus holds forth in a lecture before one of the societies at the north. Although all his propositions will not be accepted as universally correct, especially that in regard to green corn, yet the main items of his lecture as here given, will be found of much value to the dairy farmer:—

"Mr. Lewis went directly to his work of showing the vast importance of the dairy cow in a civilized community, and what he considered the best modes of caring for her. best food for the cow is grass. Grass first, last, and all the time. It was made for the cow, or the cow for the grass. Have it either way, as you like it. Should turn out early, while the grass is young and tender, and as soon as the ground is dry and will not poach. Should not give them a sudden change from dry hay to green grass. The cow should be wintered on grass, not woody fibre, which he calls hay. Does not believe in green corn for feeding. Tried it five years, then concluded to let the cow "go to grass." Top dresses his mowing lands and cuts two crops a year for Cows like grass better than corn. ten years. The hot, dry weather, can be bridged over, by grass, green or dry, better than by corn. Cows should never be allowed to fall away in either flow or condition; grass will prevent it; corn will not. Places June grass, or as it is called at the West, blue grass, at the head of all grasses for dairy stock. It makes two distinct growths in a year. White clover he does not like. Considers grain an unnatural food for cows. It will pass through, or by the first, second and third stomachs to the fourth, and beyond, in fifteen minutes after For ten cows, take one acre of being enten. the best land, and make it as good as you can; sow three bushels orchard grass, a little timothy, and other grasses if you please, in August, then cut it four times a year, getting two feet in length at each cutting. Then manure in length at each cutting again very heavily, and you will not need corn for carrying you through a dry spell, and if it is not needed, save it for winter. No one will succeed in any business unless he attends to the minutiæ and details at the right time and in the right manner. He would like Lucerne

for cow feed if he had an acre of rich, warm land, where the roots could go down eight feet. Sow all kinds of grasses for pasture, especially those indigenous to the country. Never change pastures. It demoralizes the cows, they are never contented. Fences cost too much when pastures are divided. Fields in Barre look too small. These farmers must have been very industrious. Better sink the stones. Have but two fields, pasture and tillage.

For winter feed, cut grass early, before it begins to head out, that having may be finished by the time it is in full bloom. Eight quarts of mangolds per day is the best feed to go with dry hay in winter, to make it the nearest like summer feed. Raises them at a cost of less than eight cents per pushel. Stable should be warm, but well ventilated. Milk by the clock. Milk gently, not too fast, never cause pain or uneasiness in the cow. Excitement always diminishes the quantity of the milk. Milk continuously, till finished. Be neat in the extreme. The filthy drippings from the filthy hands of a filthy man, and milking a filthy cow, must be the perfection of filth. Card daily. Be particularly gentle. Like Kind men have quiet cows, and begets like. cruel men have kicking cows, and unhappy families.'

MILK PRODUCERS AND CONTRACTORS :-The following is a telling statement lately made at a N. Hampshire farmers' meeting, by F. W. Holbrook, of Amherst, N. H. "100 cans of milk equal 850 quarts. The peddler in Boston gets 3c. per quart, which amounts to \$25.50 for 100 cans of milk. The contractor gets 1c. a quart; on 100 cans it is \$8.50. get 34c. a can, or \$34 per 100 cans delivered at the cars. It costs me 6c. a can, or \$6 per 100, to deliver it at the cars; therefore it costs 40c. per can, or \$40 to get 100 cans of milk from my door to the consumer, which leaves me 28c. a can, or \$28 for 100 cans at my door. It costs the consumer 68c. a can, or \$68 per 100 cans. It therefore costs 12c. a can, or \$12 per 100 cans, more to get my milk to the consumer in Boston than I get for it at my place; 6c. per can, or \$6 per 100 cans, more after being delivered at the cars. At 8c per quart, it costs the consumer 68c. per can, or \$68 for 100. I get \$28, which leaves the middlemen 40c. per can, or \$40 per 100 cans. It costs 34c. per can, or \$34 per 100 cans, to carry 100 cans delivered at the cars to the consumer in The wholesale price of milk in Bos-Boston. ton is 50c. per can. I get 28c.; the middlemen get 22c. per can."

For scratches in horses take white pine pitch, rosin, beeswax and honey, one ounce cach; fresh lard, one-half pound; melt well together over a slow fire, stir till quite thick, so that the parts may not settle and separate. This also makes an application for harness galls, cuts and sores of all kinds, on horses and cattle.

### Dive Stock.

#### The Brittany Cattle.

A sale of a herd of these beautiful little pet cattle, belonging to the editor of the Mass. Ploughman, recently took place in Boston, and the several animals were sold at good prices-the editor, after the sale, when there could be no suspicion of his speaking of their merits from interested motives, gave an elaborate description of the animals and of their comparative value with other cattle, and showed that, as butter cows, they were decidedly ahead of any other of the improved breeds. When their merits thus became known, there was almost a furor for some of the herd, and two or three prices were offered for them, above what they were sold for a few weeks before. The following description of these cattle, as seen at the sale, was given by a writer in the Boston Transcript :-

"In aspect they are pleasing. The color is black and white, mixed in masses, as in the Dutch, with a preponderance of the former. In size they resemble the Kerry, but they are of a finer make. The face, horns and legs are as fine as those of the Jerseys. The front line of the face is straighter, however, and this, with a little thinness of the neck, suggests the Ayrshire. The diminutive size of the creatures, some of them standing but thirty-two inches high, appears when we note that they are below the waistcoat buttons of the person examining them, and that the lower leg can be more than spanned with the thumb and finger. We have here all the attractiveness and fascination of littleness without any of that shaggy coarseness generally coupled with it in the pony and the Kerry cow. This cow, as to This cow, as to shape and delicacy of mould, seems like a miniature Jersey, with the fine limb of the antelope and the fine eye of the gazelle. It seemed to be conceded that they were very light feeders and greater milkers in propor-tion to the cost of keep than any of the popu-The milk seemed rich, if not of the very richest, and some of them were sold as giving from eight to ten quarts of it, and capable of living well wherever a goat could, and as being uniformly gentle.'

We hope that some of our wealthy citizens now or about visiting Europe this summer, will secure some of these cattle; not so much as a speculation, but as family pets, giving as they do, so much larger a per centage of cream from their milk than even the Alderney. The small amount of feed required to keep them, (10 lbs. hay per day,) would make them also very desirable as the poor cottager's cow. A

statement was made a short time ago of experiments at the Mass. Agr. College farm, testing the comparative per centage of cream of the several breeds of cattle, which tallied very closely with the following that were lately tried in England—they show a remarkable uniformity in quality of milk in the different breeds through all the trials, each breed holding its relative position in each to such an extent as to be a surprising evidence of the adaptation of different breeds to specific purposes:

P. Cocco		
No. 1. Feed-grass and hay on	ly.	
Pure Brittany cow's milk 19.27	pr. ct.	cream.
Pure Jersey18.65	66	64
Pure Durham	44	66
Pure Avrshire13,47	4.6	66
Pure Devon14.87	66	4.6
Cross bet. Jer. and Durham . 17.95	44	66

No. 2. Feed-grass, hay, one lb.	linsee	d cake.
Brittany cow's milk	pr. ct.	cream.
Jersey		66
Durham		.6
Avrshire14.14	44	44
Devon	44	44
Cross breed18.51	4.6	44

No. 3. Feed—grass, hay, brewer one measure condiment. Brittany cow's milk20.00 p	-	
	1. 06.	стевш.
Jersey	6.6	66
Durham16.09	66	66
Ayrshire 14.09	66	66
Devon	66	66
Cross breed	44	66

No. 4. Feed—grass, hay, meal an		
Brittany cow's milk22.00	pr. ct.	сгени.
Jersey	44	64
Durham	4.6	6.6
Ayrshire	4.6	64
Devon	4.4	44
Cross breed19.05	6.6	44

Brittany	-	×	1	N	7	3	n	n	il	k	١.				.2	1.	50	pr	. ct.	cre	am
Jersey															19	).(	18	•	66	64	
Durham																			6.6	61	1
Avrshire															1	1 8	34		66	6	
Devon																			66	6	6
Cross br																			44	6	6

EXTRAORDINARY SALE OF AN AMERICAN-BRED SHORT-HORN ON FOREIGN ACCOUNT.

—Just as we go to press, we have the intelligence that the well-known Kentucky breeder,

A. J. Alexander, Esq., has sold, for exportation to England, the 15th Duchess of Airdrie, for the unprecedented price of TEN THOUSAND DOLLARS!—Nat. Live Stock Jour.

GOLDDUST STOCK OF HORSES.—Mr. L. L. Dorsey, proprietor of this stock, held his annual sale on 1st of May, stallions and mares ranging in price from \$165 to \$5000—the total amount of sales was \$22,110.

#### Swine Breeders' Convention.

We continue our abstract of the reports on the different breeds of Swine, as made last winter at the National Convention of Swine Breeders:—

JERSEY REDS—CHARACTERISTICS.—A good specimen of a Jersey Red should be, red in color, with a snout of moderate length, large lop ears, small head in proportion to the size and length of the body; they should be long in the body, standing high and rangy on thin legs; bone coarse, heavy tail and brush, hair coarse, including the bristles on the back; they are valuable on account of their size and strong constitution and capacity for growth. They are not subject to mange.

DUROC.—There is another family of heavy hogs called Duroc, which are bred in Saratoga county, N. Y., which are finer in the bone and carcass than the reds. They have been bred with their crosses in this region of country for about 20 years; they are very hardy, and grow to a large size.

F. D. CURTIS.

NEAPOLITANS.—The report was presented by Mr. M. C. Weld, at considerable length. He expresses surprise that a breed possessing so much merit should have been so long neglected. Characteristics-Head, small; front head, bony and flat; face, slightly dishing; snout, rather long and very slender; ears small, thin, standing outward and forward, nearly horizontally and quite lively; jowls, very full but not large; neck, short, broad and heavy above, with small dewlap; trunk, long, cylindrical, well ribbed back; back, flat and ribs well arching, even in very low flesh; belly, horizontal on lower line; hind-quarters higher than fore, but not very much so; legs, very fine, the bones and joints being smaller than those of any other breed; hams and shoulders well developed and meaty: tail fine, curled, flat at extremity, with hairs on each side; general color, slaty or bluish plum color, that is, dark blue, with a cast of coppery red; skin, soft and fine, nearly free from hair, which when found upon the sides of the head and behind the forelegs, is black and soft and rather long; flesh to the feel fine and elastic.

Disqualification—1, any color except uniform black, slate color, plum color, or coppery slate, more or less dark; 2, a coat of coarse hair; 3, any evidence of impurity of blood or a cross: 4, any deformity or malformation.

THE SUFFOLK.—Characteristics determined as follows:—Head, small, very short; cheeks, prominent and full; face, dished; snout, small and very short; jowl, fine; ears, short, small, thin, upright, soft and silky; neck, very short and thick, the head appearing almost as if set on front of shoulders, no arching of crest: chest, wide and deep—elbows standing out, brisket, wide but not deep; shoulders, thick, rather upright, rounding outwards from top to elbow; crops, wide and full; sides and flanks, long, ribs well arched out from back, good length between; shoulders and hams,

stand well filled out, and coming well down at ham; back, broad, level and straight from creat to tail; no falling off or down at tail; hams, wide and full, well rounded out, twist very wide and full all the way down; legs, small and very short, standing wide apart, in sows, just keeping belly from the ground; bone, fine; feet, small, hoofs rather spreading; tail, small, long and tapering; skin, thin, of a pinkish shade, free from color; hair, fine and silky, not too thick; color of hair, pale yellowish white, perfectly free from any spots or other color; size, small to medium.

VICTORIA SWINE .- Chas. E. Leland, of N. York, chairman of committee, reported the following scale of points, which were adopted: The color is pure white, with a good coat of fine, soft hair; the head thin, fine and closely set over the shoulders, the face slightly dishing; the snout short; the ears erect, small and very light or thin; the shoulders bulging and deep; legs short and fine; the back broad, straight and level, and the body long; the hams round and swelling, and high at the base of the tail, with plaits or folds between the thighs; the tail fine and free from wrinkles or rolls; feathers or rosettes on the back are common; the skin is thin, soft and elastic; the flesh fine-grained and firm, with small bone and thick side-pork. The pigs easily keep in condition and can be made ready for slaughter at any age.

THE TEST OF THE SHAMBLES .- A COTTESpondent of the Northwestern Farmer gives an instance of where a farmer paid \$3 for the service of one of his cows by a Short-horn bull in his neighborhood. One of his neighbors thought the price too high, and used a scrub bull. Both cows produced bull calves, which were castrated, fed for the market, and sold as bullocks the same season; the scrub bringing \$50, and the grade Short-horn \$200. Some of the difference was undoubtedly due to difference in keep; and one may have been a very good grade, while the other may have been a very poor scrub. But much of it was due to the blood, as the animal possessing good blood has under all circumstancess a great advantage. Dr. Stevenson estimates that the farmer raising grades for beef has an advantage of fully fifty per cent.—or one-half
—over his neighbor raising scrub or native stock for the same purpose.

SALE OF FEARNAUGHT YEARLINGS.—The sale of yearling colts and fillies, the get of Col. H. S. Russell's celebrated trotting stallion Fearnaught, (by Young Morrill, dam by the Steve French horse, son of Flint Morgan, by Sherman Morgan,) came off on the 6th inst., at the Home Farm, Milton, Mass. There were seven colts and nine fillies, making 16 head in all, the lot aggregating the handsome sum of \$14,000. This successful result speaks well for the reputation of Fearnaught, the prices realized being quite up to the highest average figures yet reached at any one sale of

thoroughbred yearlings. At the last annual sale of A. J. Alexander, Esq., at the Woodburn Stud Farm, Woodford county, Ky., the first sixteen colts on the catalogue, the best in the collection, brought a total of \$14,820, and the first sixteen fillies, \$9,375. Taking an average of colts and fillies sold, the prices realized do of coits and filles sold, the prices realized do not come up to those recently sold by Col. Russell. In justice to the stock sold periodically by Mr. Alexander, it should be stated if the animals purchased do not all turn out racers, purchasers get the worth of their money in the stud. It remains to be seen whether the Fearnaught youngsters will realize the expectations of their respective owners. The sire is a reliable foal getter, the quality of the dams, through their produce, has yet to be tried.—Turf, Field and Farm.

The National Live Stock Journal, has some excellent words of encouragement as given below:

Merinos now are not the gummy-fleeced ones of only five years ago; the exhibitors now call attention to the length, fineness and whiteness of the fleeces, showing a marked increase in yield of wool when cleansed, and freedom from grease and yolk in undue quantities. But prices of first class fine wool sheep, although not up to war prices, are yet comparatively high, there being but little average difference between long-wools and fine-wools in this respect. Good thoroughbred sheep of all kinds are not to be got for a song. Breeders will not sell good lambs for less than \$15 to \$25 each; and older sheep are held in proportion. Extra sheep are held at from \$25 to \$2500 each, depending on age, weight, strain of blood, weight of fleece, shape, &c.

THE IMPORTANCE OF CARE IN BREEDING. -At a late sale of Short-horns in England, 31 cows realized \$17,976, or an average of \$580 each; and 7 bulls brought \$1412, or an average of \$202 each. The whole sale produced \$19,388, or an average per head of over \$510-whilst at another (annual) sale, that of Mr. Cruickshanks, of Sittyton, Aberdeen, 36 bulls were sold for \$7607, or an average of \$211; and 18 heifers were sold for \$2520, or an average of \$140. The Sittyton herd is supposed to be the largest herd of Short-horns in the world: but though the animals are of excellent quality and the sires are invariably of the highest class, the prices obtained for them fall far short of those realized by English breeders. This arises from the fact that little regard is paid by Mr. Cruickshanks to the preservation of distinct tribes or families in breeding- but all are intermingled in the most defiant manner.

Swine.-Let pigs of all ages have access to a mixture of ashes, salt, and sulphur. Keep the pens and troughs clean. Let them have a dry, warm well-ventilated place to sleeep in. Do not put too many in a pen.

### The Loultry Mard.

WHAT A YOUNG LADY DID LAST YEAR. The Delaware Co. (Pa.) American gives the following account of a young lady's success in poultry raising :-

'In Concord, a farmer's daughter, during the past year, had the care of his poultry yard. In the spring she commenced with about sixty fowls, of the common breeds, including one Dominique rooster and several hens of that She also had two roosters of the Partridge Cochin breed. From these she raised 350 chickens. When young she fed on cracked corn, but when fattening them, gave whole corn and Indian meal. During the season she sold eggs to the amount of \$90, and from September 20th to January 17th, she got ready for market 150 pairs of chickens, which she sold for \$260, making in all \$350. She thinks the Dominiques much the best for market, but they are not hardy when young. She has some young hens of the Partridge Cochin breed which weigh 6, 7, and 8 pounds each. It will be seen from this statement, what may be done by proper attention to poultry, the profit being perhaps greater than almost any branch of farming. It also shows that the business is one in which females may engage with success. The time occupied in caring for sixty to a hundred hens doesn't average more than an hour or two a day. The exercise is light and pleasant and the change from household duties rather agreeable than otherwise. Indeed we consider the poultry business as an occupation, both profitable and interesting. Gathering eggs, setting the hens, watching the hatching, and tending to the young has a charm, which in connection with the profit, is calculated to please every lover of nature's great working world."

EGGS AS A COMMERCIAL COMMODITY .-From the People's Practical Poultry Book, we make some extracts upon this point :-

Eogs consumed in Paris.-In Paris it was calculated that the annual average consumption of eggs per head was one hundred and seventy five, or in a population of two mil-lions a total of three hundred and fifty mil-lions. The average of the country districts was placed even still higher than this, while the aggregate French product has been estimated at between seven and eight thousand millions annually, a number large enough to form a string of beads that would twice encircle the globe.

In Great Britain the quantity consumed has been set down at one billion five hundred millions, of which one hundred millions are imported. The bulk of the importations and large quantities of the home produce go to London, which, however, does not eat, proportionately, so large a number as Paris.

Comparison with New York city.—It will be

safe to assert, after a due comparison with these cities, that New York consumes annually one hundred million eggs-an amount which may be more readily comprehended by remembering that this number would weigh about thirty-six thousand tons, and on the principle that an egg is equal in nutritious value to a quarter of a pound of meat, would represent an average of twenty-five pounds of flesh meat per year, for every man, woman and child in the metropolis.

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THE GAPES.-This disease can be readily cured by putting in a bow a thick hair into the bill of the chick, by which the worm is drawn forth; sometimes as many as a dozen of these worms are caught. A subscriber who has tried this plan, reports its entire success, and we had known before of its efficacy, having seen a young country housewife try it with like success; but some who essayed to do the same thing were not successful, perhaps from want of skill or steadiness. It is suggested that these worms are bred from lice found in the head of the young chick, which make their way through a small aperture in the bill, and breed there—these lice can be readily killed by rubbing the head with coal or other pungent oil. In using the hair as above recommended, care must be taken to

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#### Sowing Blue Grass Seed.

Mr. Fassett, an extensive farmer, in the . Prairie Farmer gives some useful directions upon this subject. He says :-

The opinions of farmers differ in regard to the time that Blue Grass should be sown. Some advise sowing it in the spring; others recommend to sow in August. My own experience is, that the best time to sow any and all kinds of grass seed is, from the middle of February to the middle of March in this latitude; further south it would probable be better to sow some earlier; further north,

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others quarterly.

Advertisements should reach us by the 20th of the month, to secure insertion in the succeeding issue.

#### BALTIMORE, MD., JULY 1, 1873.

MR. NEWTON'S LETTER.-The question propounded by our correspondent, and which has elicited answers from many writers in our pages, is pronounced by its originator as receiving its solution in the adoption of two measures, the passage of the Bankrupt Act and the Resumption of Specie Payments. Of course it is not to be expected that the conclusions at which he has arrived upon the subject will receive universal approval-the pressure is too heavily felt to wait for the definite adoption of the most vital measure of the two alluded to, and many are doubtful whether its adoption would not operate far more upon the debtor class to their injury than to their benefit.

We expect to receive in due time from the pen of Mr. Newton, some very interesting papers upon other subjects bearing more directly upon the agricultural interests, which we can promise in advance, we think, will be received with universal acquiescence.

We cannot permit the opportunity to pass without adding, that Mr. Newton falls into an error when he limits our warm commendation of the plan followed by Mr. Gilmer, as given in his letter in our June issue, to the

women of Maryland and Virginia only. We specially said that it was for the women of the whole country to adopt with willing hearts all plans of economy and retrenchment.—Could the gold yearly sent abroad for those articles of luxury so much indulged in by both men and women, be retained at home, that a return to a system of specie payments, with all its advantages, would be earlier and easier reached, is as true as the proposition is trite, or its realization improbable.

The phrase, "a new departure," had application only to Mr. Gilmer's individual experience, yet it is true as he says, that the system once adopted, many a man would be astonished how few and small his real wants are. It was in this sense that we referred to the gratification that Mr. G. experienced, that he had found, not for all, but for himself, the solution of the question which engages us.

THE WHEAT CROP.—The lateness of the season has put the wheat back, but on the whole, it looks well, and where the plants were not winter-killed, a fair crop may be expected—a full average crop, however, cannot be looked for. In examining the accounts received from all quarters, we have come to the above conclusion.

A correspondent in Westmoreland Co., Va., writes us of the wheat in his section that it is said to be better than elsewhere, and that "it is well grown and promises a good yield, if not damaged by the rust, which I am sorry to say, has attacked it. The weather here is very favorable. From want of capital the breadth sown was small, and under most favorable circumstances, the crop will not exceed one-eighth of the crop of cld times."

Prospect for Fruit.—The severity of the past winter has undoubtedly injured the fruit in many local ties, but of course no other varieties have suffered as have the peaches.—Apples, last year, were an unusually large crop, and cannot be expected to approach it in quantity this season. The Vine, too, has been severely injured in many locations, whilst the smaller varieties of truit appear to be doing quite well—Strawberries have been very abundant, and those who were able to get them into market early, obtained good prices; at the end of the season, however, they sold very low, but the quantity raised made up the difference.

#### Seed Growing in Virginia.

In last month's Farmer we referred to the fact that the Northern Neck of Virginia was receiving considerable additions to its permanent population by the settlement from time to time of immigrants from the Northern and Eastern States and from Europe, who are buying lands and beginning their cultivation. There are also on the Rappahannock river some establishments, recently put in operation, for the canning of oysters and of fruits and vegetables, which will give a near market to very many producers of the latter articles.

There is one enterprise, however, which to our mind conveys more than any other a significant token of the value of the lands on this peninsula. The bouse of D. Landreth & Son is well known to many of our readers not only as one of the oldest, but also as one universally regarded among the most reliable and honorable of those engaged in the trade of growing and selling field, vegetable and flower seeds. Their extensive seed farms at Bloomsdale, not very far remote from Philadelphia, are said to be models of neatness and fertility, and the effort of the enterprising proprietors to avail themselves of every advantage offered by the improvements in mechanism, was recently shown in the letter from them, published in these pages, giving a relation of the operations on their places of the Williamson Steam Plough. This firm doubtless finding their farms near Philadelphia too valuable, and perhaps too small, for their ever-expanding business-have recently purchased an extensive tract of land at Monaskon, on the Rappahannock, in Lancaster county, where they are growing many varieties of those seeds which for so many years they have been distributing over every part of our own and to many foreign countries. Large buildings have been erected; a systematic and thorough amelioration of the soil commenced and a general improvement of the condition and appearance of the place inaugurated. We saw a short time ago, at some distance, from the deck of a steamer stopping at the wharf on this place, the evidences of neatness and order presented by the farm of which these gentlemen have become possessed. The crops planted for the seed were many of them in full bloom, and the sight was as beautiful, as in this section it is a rare

The location chosen is doubtless a favorable one, and its choice, reflecting as we believe it does, the judgment and skill of a house known for its discrimination and enterprise, will, we are hopeful in believing, be followed by the commencement of similar undertakings on these rivers. The climate, admitting of so much longer work out of doors, than at the North; the facility of transportation; the kind and easily worked soil, and the abundance of labor, point to the section where the Messrs. Landreth have located as one admirably suited for seed farms, as it also is for market gardens.

#### Mr. Schmidt's Vineyard.

We very pleasantly spent an hour or two one day last month in going through the vineyard of Mr. Charles T. Schmidt, a few miles from this city, of which we gave some account in our last volume. We found, somewhat to our surprise, that the very severe weather of the past winter had done no injury at all to any portion of the vines, all the varieties here, even in the most exposed situations, growing vigorously and giving promise of an abundant crop of fruit. Not only the hardy kinds, like the Concord, Hartford Prolific and Ires, but the more delicate varieties, such as the Iona and Rogers' Hybrids, all promise large yields, those situated on the northern slope of the hill on which the vinevard is planted being, if possible, more luxuriant of growth than any differently situated, so much so indeed, that Mr. Schmidt is inclined to believe that his former preference for that exposure as the most suitable in this latitude for the grape is fully justified.

At the time of our visit the vine dressers were employed in pinching in the vines, an operation which, where the grapes are counted by the thousand, seems an almost unending one. The cultivators were also passing through the rows and hand weeding and hoeing had been inaugurated.

Mr. Schmidt incidentally remarked to us that the native wines are making their way into public favor, and he is so much encouraged by the prospect of his experiment widening the demand for them, that he has it in contemplation to largely extend his plantations.

We viewed with much interest the pruning and training the vines, but these operations are from time to time discussed in these columns by hands so much abler than ours, that we could hope to throw no new light on these not very simple processes to the uninitiated.

Our correspondent C. W. R., whose letter on the vine will be seen on another page, writes us under date of June 14th:

"Let me add, by way of Postscript, that I find only one vine has died utterly, an Israella. All the rest are growing rapidly; many of them sending strong canes from the roots. These I pinch in, at the proper height, to form the two arms for next year, when, with a little care, I hope to see my vines in good trim, and well laden with fruit."

#### Our Advertisers.

Among our new advertisements of this month will be found that of Messrs. Canfield Bro. & Co., whose house is one of the oldest and most respectable in its line in this city. Their stock of fine watches, jewelry, silver ware, &c., is very extensive and handsome, and those in need of such goods will find them here in great variety and beauty.

The house of Harrington & Mills is well known here for its superior and tasteful furniture, made not only to please the eye by its graceful forms and comfortable upholstering, but also by its durability to attest the superior materials and excellent workmanship put in it. The cane furniture they advertise is specially suited for the warm weather, and country houses.

Mr. A. B. Farquhar, of York, Pa., is the manufacturer of numerous well known agricultural implements of proved merit, and the machinery turned out from his extensive works bears the test of thorough trial.

The Bickford and Huffman Drill advertised by Col. H. P. Underhill, we have in another portion of this No. referred to at such length, that no further reference is needed to it here than to call attention to the location of the agent.

The prepared paints such as those of the Averill Co., advertised by the Messrs. Catheart are worth a trial by those who are about painting. They are beautiful and durable.

Mr. J. C. Durborow, a regular advertiser in the supplement to the Farmer, it will be noticed has changed his quarters, having removed to 55 Light street, where he keeps-on hand a large stock of the specialties in his line, including the "Kirby" Reapers and Mowers. CROPS, &C. IN NORTH CAROLINA.—Rev. J. P. McPherson, of Richmond Co., N. C. (June 3,) encloses his subscription to the American Farmer, and remarks:—

"I have become so much pleased with the Farmer that I cannot well do without it. There are so many items of valuable information, that no one who appreciates knowledge can read it without benefit. A friend called to see me the other day, took up the Farmer, and at once found two items, on which he had been seeking information, and thus far had been unable to obtain it.

The grains of 'prolific corn' you sent me I planted at once. It is now knee high, and is growing finely. I planted in my garden, manured highly with home-made manure.

I am sorry to say that the frost in April damaged us badly. The gardens, orchards, grape vines, melon vines, corn and cotton, were either killed or seriously lurt. We will have neither apples nor peaches this summer. My English grape vines are badly hurt. Irish potatoes will be very scarce here—they were cut down by the frost, and do not seem to recover.

Our farmers here have planted cotton three times, some finishing as late as last week. Generally the plant looks sickly, and the grass is in advance of the cotton, and seems hard to conquer

There is a growing conviction among our people that they must plant less and manure higher—yes, and make their own manure. Until this can be done on a larger scale, some bought fertilizers must be used. I am fully satisfied that our cotton farmers are using too much 'guano' and not enough of home-made manure."

SHEEP NOTES.—Genl. Jno. S. Goe, of Brownsville, Pa., sends us a statement of the weight of fleeces of his Spanish Merino sheep sheared the last week in May. Two rams yielded, respectively, 25 lbs., 11 oz., and 22 lbs., 11 oz.; one ewe sheared 21 lbs., 1 oz., and the others ranged from 11 lbs. to 20 lbs., 2 oz. The entire flock, numbering 196 sheep, of both sexes and all ages, but mostly lambs under one year, averaged about 13½ lbs. The Genl. informs us that he has recently shipped to Utah two car loads of sheep (118 of which were from his own flock) and a pair of Angora goats bred by himself.

THE CORN CROP, in every direction, has been gotten in late—we believe that in the West as well as the East and in the Middle States and the South, this is the case—still we are led to hope, that as the season was late for planting, the interval before frost will be extended, so that a good crop, though not like that of last year, may be expected.

AGRICULTURAL MEETINGS IN BALTIMORE Co.-On the 5th ult. we attended the regular monthly meeting of the Gunpowder Club, held at the residence of Mr. A. Matthews, on the York road. The usual routine was observed. after the organization for the day, by the selection of Mr. Joshua Gorsuch as presiding The members examined the farm buildings, improvements, and growing crops of Mr. Matthews, after which they adjourned for a while to partake of the usual early supper prepared by the good wife of their host, and to which ample justice was rendered. After the re-assembling, the business of the day was proceeded with, the discussion of the question being, as to the advantages of green manuring, and the best means of securing them, upon which, as is the custom, every member of the club was called to give his opinion or experience. These meetings are extremely pleasant and instructive, and similar clubs should be formed in every part of the county, for wherever established, good results cannot but ensue. The next meeting will be held on 5th July, at the residence of Mr. A. Scott.

The Baltimore Co. "Farmers' Union," is the name of a new association, recently formed, the head quarters of which are located over Duncan's store, near Cockeysville. It originated at a meeting called some weeks ago, to consider certain grievances complained of by the farmers selling hay in Baltimore by the wagon load, the particulars of which a committee was appointed to lay before the Governor of the State, with a request that he would interpose his authority to correct the the evils complained of. At this meeting, which was called at the suggestion of the Baltimore Co. Clubs, it was determined to form a Union Association, to be composed of such persons as are farmers or interested in farming in the county, and officers were appointed as follows:-Mr. Samuel M. Rankin, President, Mr. Thos. Gorsuch, Recording Secretary, Wm. Webster, Corresponding Secretary, Geo. H. Harryman, Treasurer, and Jno. D. Matthews and Ns. T. Hutchins, Vice-Presidents.

A committee was appointed to prepare a constitution, and propose business for an adjourned meeting, which was held on the 14th ult., when the constitution was read, discussed, and referred back to the committee for further action. Mr. Webster, from the committee on business, reported an Address to the Farmers of Baltimore county, showing the necessity

of organization, to enable the tillers of the soil to cope with those engaged in other pursuits, most of whom have regular associations to protect their interests, and many of whom are directly dependent upon the labor and success of the agriculturists of the country. The address was adopted and ordered to be printed; when we receive a copy, we may make some extracts from it. Mr. Lawrence, of Howard Co. who was present, was called upon to address the meeting, which he did, showing the necessity and advantage of organization among the farmers of the State.

We would suggest to the Farmers' Union, that special efforts should be made by it, for the establishment of clubs in every part of the county, which will make the "Union" a kind of nucleus around which the sentiment of their class shall rally, by the appointment by each club of a delegation to attend quarterly meetings of the Central association, when all questions may be discussed, and cooperation secured upon all subjects which may arise touching the interests of the whole body of those whom they may thus represent. In the nature of things, but few persons other than those resident in the neighborhood, can be expected to attend the "Union" as now constituted, as often as may be desirable, and consequently its influence will be comparatively limited-but having a representation at stated times, of delegates from all the districts of the county, or by special call when any pressing necessity may seem to require it, the united voice of the whole people may be thus heard, and their wishes made manifest in any action which may be considered necessary. This system could be extended in due time to all the counties of the State, and in like manner conventions might be held, comprising delegates from each county Central Association; to deliberate upon measures affecting the general welfare of the farmers of the whole

THE SEASON.—The early part of June was very dry, and it was not until the middle of the month that we had any rain in this vicinity. Vegetation, however, did not appear to suffer as much as might have been expected; the surface of the earth was a good deal parched, but the wet season early in the spring had so esturated the earth that we believe the moisture had the effect of preventing the later drought from having as much effect as might otherwise have been anticipated.

The communication of Mr. A. Jackson on silk culture, we would particularly commend to those who are engaged in the business. We hope some public-spirited capitalists will second the offer of our correspondent to translate the work alluded to by him-it would be doubtless a public benefaction. We are convinced that the Silk as well as the Wine business of the U. States, is destined to increase to immense proportions, and it mainly rests with the landholders to push forward the same, by preparing the raw materials with which to supply the manufacturers. The cultivation of Beet Roots for the production of Sugar, is also another branch of industry that is making decided progress in this country.

To show the advance now making in the silk manufacture here, we copy the following paragraph from the correspondent of a French journal, the "Bulletin de la Societe d'Acclimation" of August, 1872:—

"It is not enough for the United States to have in some sort the monopoly of cotton, the fabrication of silk is there taking immense proportions. There are numerous manufactories in Massachusetts; New Jersey has sixteen spinning establishments, with 75,000 bobbins; 1500 workmen are employed in the silk manufactories of Philadelphia, and this interest employs a capital of not less than \$5,000,-000 in Connecticut,-the house of Cheney Brothers, of Hartford, alone, weaves daily 1500 yards of silk goods, and 4000 yards of other stuffs in which silk is the chief component part, not speaking of innumerable yards of ribbon and sewing-silk. The importation of raw silk to supply the always increasing demands of this business increases every year. But Americans will understand that they ought to have all the benefit of producing the raw material among themselves; and there is no doubt that they will devote themselves to it on a large scale. An establishment in San Francisco, Cal., is provided with machinery to work up three thousand dollars' worth of silk per week, although at present it works up only about five thousand dollars worth per month. The silk which it uses comes principally from China and Japan. The company has tested also all the silks of indigenous production, which it appears are of very good quality, and superior to most of those of China and Japan. The climate of California seems perfectly suited to the sericultural industry.

A series of interesting letters is being published in the California Farmer, by Mr. Felix Gillett, a French gentleman, which are very valuable to those engaged in raising the trees, feeding the worms, or reeling the floss silk. He says in one of his articles that an

Italian gentleman is engaging largely in California in the raising of the food for the silk worm to supply the cocoons for the Italian workshops.

HEAVY EXPORTS OF CORN.-To show the immense amount of grain which is being shipped to Europe, we would state that in one week of the last month, 13 vessels cleared at the Baltimore Custom House with an aggregate of 321,609 bushels corn. The evidences daily afforded are, that, with greater facilities for freights, the farmers of the Middle States will be driven out of the market by the competition of the West, for the largest portion of these shipments (and the above is but one of frequent occurrence) is from the far West, and dropped into our elevators and thence shipped off as fast as vessels can be procured. It shows moreover that other objects must claim the attention of our farmers, to diversify their products.

QUEEN ANNE'S Co. (Md.) AGRL SOCIETY.

—This Society has recently elected as officers for the ensuing year, W. T. P. Turpin, President; W. D. Keating, Vice-President and Librarian; Edw. B. Emory, Secretary and Treasurer.

The Montgomery Co. (Md.) Agrl. Society has elected Elisha J. Hall, President; R. M. Williams, Rec. Sec'y, and H. W. Talbott, Treasurer, for the ensuing year.

SHEEP IN THE SOUTH.—A Tennessee farmer writes to the New York World, that he loses more sheep during the dry months of August and September, than in all the rest of the year. During those months, the growth of vegetation is parched, the growth of fresh grass suspended, water scarce and bad, and the sheep are so troubled with the flies and heat, that they stand or lie in the shade all day. As a consequence, they fall off and become sluggish, and the weaker ones die, particularly the lambs that come by the middle of February, both for keeping and for the early Northern market. To effectually remedy the evil complained of a soiling crop should be grown to feed the sheep in time of drought.

LIME IN CROPS.—There is said to be carried off from the soil nine pounds in twenty-five bushels of oats, and fifteen pounds in thirty-five pounds of lime in two tons of rye-grass; one hundred and forty pounds in twenty-five tons of turnips, and two hundred and seventy pounds in nine tons of potatoes. Some soils contain abundance of lime for a thousand years, while others require an occasional application of lime as a fertilizer.—Ex.

# The florist.

### Floriculture, &c .- July, 1873.

By W. D. BRACKENRIDGE, Florist and Nurseryman, Govanstown, Baltimore county, Md. The Green-House.

During the three summer months, that love for the beauties which adorn the green-house and conservatory, is considerably abated; this may be accounted for in two ways, first, the atmosphere inside is too close and warm for comfort, and secondly, the number of objects of interest within may not be comparable to what is to be seen in the flower bed or shrubbery; yet who would not subject themselves to a little discomfort in order to regale their eyes with a sight of the luxurious foliage of a stately Palm or majestic Banana, crowned by a spike of golden fruit, shaded by a network of creepers—made up of tropical Bignonias, Passifloras and Aristolochias, with their saccate or bag shaped suspended flowers; these by their splendor being truly inviting productions, and more so when they have growing in their shade a collection of zoned or spotted Caladiums to which Gloxinias and Achimenes are a great accession, not forgetting to have a good sprinkling of Ferns and Selaginellas intermingled therewith. To have all these in fine condition, a humid atmosphere and free circulatiom of air are essential elements.

#### Pleasure Grounds and Flower Garden.

There are a thousand little things which should be performed, if the flower garden and pleasure grounds are kept in proper order, and to dot down here one-tenth part of all that should be attended to, would tend more to bewilder than instruct, particularly when we take into consideration the exciting and changable character of our climate; this in conjunction with the glaring fact, that not more than one place in ten that makes any pretentions at keeping a gardening establishment, employ more than one-half the force of hands necessary to preserve things in any thing like good order; hence work is performed in a hurried manner or left undone until the season when it should have been performed is passed. In view of all this we would say, undertake no more in the ornamental line than can be properly cared for; rather sow down to grass, for hay, such spots as consume men's time in trying to keep them neat, or plant in potatoes, to be worked by the plough.

In the July number of last year's Farmer, we stated that at this season Roses and other shrubs could be propagated successfully by layers, and we now remind our readers to get about this work ere the month is over, for if done later, they fail to make roots enough before fall to ensure their safety, and would therefore have to remain another year on the stool. Roses raised in this way, or by cuttings, are better suited for the amateur than such as

are budded, the latter very frequently sending up suckers or shoots from the stock, which, if allowed to grow, would ultimately annihilate the genuine one.

In the grouping of plants in parterres or beds, several methods are adopted; some arrange things in a promiscuous manner, others group them by colors, while the third starts off on the ribbon style, but which method is the best to us, must depend entirely on the size of the place, and form and position of the beds; but in all cases, bringing together glaring contrasts of color should be avoided. the beds many plants will require to be pinched back, while others will need to be pegged down to the ground, and when the earth is friable, the hoe and rake should be used to keep the surface open, as this stirring of it up prevents the plants from suffering during severe droughts; and in giving water let it be applied in such quantities that it will penetrate to the extremities of the roots.

Should the weather prove dry, it will be necessary to water and mulch Dahlias. In training these plants, most people trim to one stem which they tie to a stake; now for ourselves we permit as many as three stems to grow, these we seldom or ever tie to stakes, simply observing, when planting, to give the stem a position that as it grows it will readily recline on the ground as do tomatoes: by this mode of treatment, much larger flowers are produced.

If hedges have not been trimmed, this should be attended to at once; those composed of Roses don't stand switching as other hedges; simply use the pruning knife or shears in shortening back struggling shoots. In our nursery, we have a hedge of the Bourbon Appoline Rose, which has given great satisfaction for the past ten years—in fact it is all any person could desire.

W. D. B.

Roses.—The following list is sent us by an amateur, who says it makes the "creme de la oreme" of roses; and that while some will differ from him, if there are better ones, he wants to buy:

Hybrid Perpetuals.—Gen. Jacqueminot, John Hopper, Charles Lefebre, Anna de Diesbach, Jules Margottin, Victor Verdier, Geant des Battailles, Maurice Bernardin, Monte Christo, Prince Camille de Rohan, La France, Comptesse de Chabrilliant.

Bourbon.—Appoline, Emotion, Hermosa, Souvenir de Malmaison, Sombreuil, Imperatrice Eugenie.

Tea.—Marechal Niel, Gloire de Dijon, Saffrano, Viscomptesse de Cazes, Bon Silene, Demoniensis.

Noisette.—Amie Vibert, Madamoiselle Aristide, Woodland Margaret, Celine Forestier, Solfatare, Lamarque. w. s. T.

Fumigation for Plants.—Mr. J. C. Niven, of the Hull Botanical Garden, recommends tobacco fumigation (in London Garden) for

cleaning green flies from certain house plants infested by them. His plan is to lay the plant on its side in a wash-tub, throw over it a damp towel, or better, "a bit of glazed calico lining," and then, through an opening at the bottom, have "your husband" insert the end of a pipe, and through it let him blow tobacco smoke until the plant gets a good fumigation. The flies will be found at the bottom of the tub when the operation is finished. The plants should be perfectly dry when the operation is performed, but if a towel is used it should be freshly washed and wrung out before using, and be without holes. The pipe stem should reach to the bottom of the tub.

MAKING MANURE FOR A GRASS CROP.— We clipped the following from a cotemporary journal, but we do not remember which:—

Make a large compost heap mainly of stable manure and muck, or good rich soil, with plenty of sulphate of lime (plaster), then a small addition of sulphate of ammonia and sulphate of potash, mix all thoroughly together and cover the pile from the rain until wanted for use, say at least ten days or two weeks; in the meantime prepare the fields for sowing or planting the seeds, then spread and harrow in the compost and plant immediately. If a crop of red clover is grown it will without any addition of nitrogenous manure make several good forage crops, and then the sod when plowed in will supply to the soil suffi-cient ammonia to dispense with the sulphate of ammonia in the next compost heap; but the compost heap must be made for each crop. By thus adding sulphates instead of nitrates to the compost heap, you have a more permanent and less wasting fertilizer, and yet it is sufficiently soluble to be assimilated by growing plants. The sulphate of ammonia is much better for a leachy soil than the nitrate of soda, as the latter is so very soluble that its nitric acid in heavy rains is sunk so deep in the soil as to get beyond the reach of the young plants.

We also give the following suggestions from the Rural World:—

PREFARING THE LAND FOR GRASS:—We are apt, very apt, to overlook the fact that land intended for grass, should receive more thorough culture than any other, because for years while in grass, it has not the advantage of the plough and other implements to stir the soil, but must rest and pack, and get more and more in a condition to keep out the air, and let in and pass off less readily the water. We should, therefore, thoroughly prepare the soil. Plow as deep, as may be, and subsoil well; pulverize and enrich the soil—enriching it will make it more loose and mellow, and keep it longer in that condition, as well as increase the yield. Such land will "catch" its seed, and if plentifully applied, will be certain under any thing like favorable circumstances to form a thick set. A little top dressing, aided by the aftermath, which should

never be fed close, will ensure good cropstwo cuttings a year.

But let there be a cold hard undersoil, and the seed put in in the usual way—little of it and on harsh reduced soil, without manure—what can be expected of it? Just what we see: light crops, getting lighter each year until it will hardly pay for harvesting. Such land when the plough turns it down, will be found to be hard. The sod amounts to but little, whereas, in properly treated land, it will yield from sixty to seventy loads of manure per acre. A mellow seed bed, deeply loosened soil, well enriched, plenty of seed sown as early as possible—are the points to be secured in putting down grass land.

#### DOMESTIC RECIPES.

MUTTON TALLOW—A most useful article.—
Take best lamb-suet, soak in cold water, changing frequently till the water ceases to be the least colored with blood; keep it in a very cool place, stew it gently in a tin stew-pan, adding a small quantity of water; when clear, strain through old muslin, into small moulds or tin patties; when cold, invert the moulds or patties—on thick paper, keep in a dry, cool closet. Prepared in this manner, it will keep sweet six years.

T.

BREAKFAST CAKES.—One quart milk, seven eggs, a piece of butter the size of an egg, enough rye flour to make a very thin batter. Beat the yolks of the eggs and the butter together, add half the milk, then sift in the flour and put in the whites of the eggs beaten very light, salt to taste, and pour in the rest

of the milk.

Rusk.—Boil a pint of milk and melt in it a quarter pound of butter; beat a pound of sugar with two eggs and pour over them the toiling milk, stirring all the time. When nearly cold, stir in half a teacup of yeast, a teaspoonful of salt, and flour enough to make a stiff batter, in which, when light, knead in sufficient flour to make a soft dough, and a grated nutmeg; let it rise again till very light, then make into shape and bake. When they come out of the oven dust a little sugar over them.

STEWED CLAMS.—Strain the liquor and stew them in it for about 20 minutes, make a thickening of flour, water and pepper; stir this in and let it boil up. Have some bread toasted, and buttered in a deep dish, and pour the clams over it.

CLAM SOUP.—Put an equal quantity of water with the liquor, and put in toasted bread, crackers or dumplings, cooking and seasoning

as above.

To PRESERVE GOOSEBERRIES.—Take large berries, pick off stems and blossoms, add their weight in sugar, put them in a kettle alternately with the sugar, pour over them one pint of water to four pounds of fruit; let them boil gently till the scum rises; when this is taken off, let them cook fast; when clear, take them up on dishes, and boll the syrup longer.

# The fireside.

#### RUSTIC POEMS.

#### A DAY IN THE FIELDS.

BY MRS. H. BUCKNER.

Again, dear memory, stretch thy hand, Bweet angel from the skies, And lead me to my father-land, And its hills and forests grand, And bid the past arise.

The early summer's peaceful dawn Smiles purple on the strath, Bright dew drops deck the budding thorn, Illumined by the rays of morn, Along the open path.

The robins whistle in the brake,
The soaring larks arise,
Their sober pinions gaily shake,
And mount above the meadow lake,
To bathe in azure skies.

In yonder emerald pasture wide, I see two snowy lambs, Dear objects of my childish pride, They frisk and sport from side to side, Around their freecy dams.

The farmer's wain is at the door,
My father bids me come—
I leave the half swept caken floor,
And skip the narrow grass plat o'er,
In joy with him to roam.

He turns the heavy upland sod, I gather violets blue, Fond tokens of the loving God, Which He has scattered wide and broad, To make His children true.

We seek the shady, sparkling rill, Our noonday thirst to slake, The happy birds above us sing, And make the merry green woods ring, While answering echoes wake.

Down by the babbling streamlet's side We eat our cool repast— The slender, shining minnows glide Along the winding, crystal tide, To snatch the crumbs in haste.

Back to the field we take our way, He to his steady toil— I watch the nimble squirrels play, Till Hesper shuts the gates of day And hushes man's turmoil.

The night-hawk in the gloomy swale
Has sought its grassy bed;
Its wretched cries my ears assail—
So like a trusting woman's wail
When love and faith have fied.
Paris, Tecas.

#### A Sad Calamity.

[It is with deep regret that we have received the following letter from our respected and venerable friend, Mr. Gilmer. While sympathising sincerely with him in the great loss he has experienced, we can only admire and commend the resignation he evinces under the circumstances.—Eds. A. F.]

Mesers. Editors of the American Farmer:

My Friends—On last Tuesday evening (the 10th inst.) I set to work to write out my reasons for not having written my article on

green fallows, and the reasons which prompted me to write my last article (in your June No.) in its stead. My letter was destroyed by the burning of my sweet home on that night. It was a large convenient house of thirteen rooms, all built since the war; perhaps I idolized it too much. It is now all in ashes, and I and mine are now all closely crammed into my sixteen feet office with a half story above, two fire-places, two porches and a small closet—a sad contrast to what I was master of this day week, when writing for the benefit of my fellow men through your esteemed Farmer. Such a loss in these times is truly sad and discouraging to those who have not well learnt to put their trust in our good and kind Creator, from whose bountiful stores I and mine have been so liberally supplied so long. As we had to be burnt out, never, never, were two old people more kindly favored than were my wife and myself; we were aroused in ample time to have saved our home, if we had had only a few buckets of water or one active strong man, or had only thought of our four or five hundred pounds of wool washed and put over our cooking room that day. The hands could not be had in time, the water was not there and the wool only thought of when too late; a young white man, with two broken ribs, was too sound asleep in my office, and two colored men in an out house, all of whom I heard were gone, and I and my wife battled with the flames for, it seemed a half hour, all alone, when these three hands came to our assistance. The very flames and the wind seemed to sympathize with and favor us all they could; the wind blew against the fire and every door and window we opened helped us, and the fire certainly burnt more slowly than I ever saw a house burn before, which enabled us, after finding the house must be burnt, to save all of my important and valuable papers, my daughter's piano, and most of the valuable furniture. Our friends wondered how so few and such a crippled set could have saved so much. It was all owing to the cool, calm, deliberate example of my dear wife, who, with me, as we left our bed, struggled all the time, and neither of us saved a shoe, stocking, sock, bonnet or hat, struggling to save what was of more value, and after all was over we had to send to a friend for clothing, which gave ground Strange for the opinion we lost every thing. Strange to tell, though my wife and myself thus long exposed and hard worked, neither of us have been sick nor felt any incovenience from our exposure, but from my crippled and burnt hands, which makes writing quite painful to me. When I saw the last blind of my chamber window fall and the heavy slate roof fall in, I never saw such a shower of sparks as then burst up-and the awful idea occurred to me, thus crowded will arise our disembodied spirits from the conflagration of this world. What sort of sparks will I and mine be on that awful occasion. Then came the description of our esteemed friend, Dr. James Smith in the June No. of his dear little sweet ones

taken from him, and shall I dare to complain for the loss of a few brick, plank and mortar, which can so easily be done without, or replaced; when brother Smith has lost his dear little ones and yet praises his good Father in Heaven. No! no! I will not complain, but like him praise and try the more to serve my God and the better to prepare to meet the dear little ones I too have lost in early life. I have lost my home, but I have found what a precious jewel I have in a fond wife and warm hearted children, all of whom hurriedly came with warm hearts and open hands to cheer and comfort us. God be praised, no life was lost in the fire. Farewell, my dear friends, with best wishes for your success and the good of our common country, truly your old yet warmly attached friend. GEO. C. GILMER. Albemarle Co., Va., June 18, 1873.

#### Treatment of Flowers.

Don't be discouraged, lady readers of the American Farmer, if you do not succeed in the cultivation of new plants, strangers, but always welcome to the stock of old favorites. Study the effect of different situations-if too much sun or shade in summer, and high or low temperature in winter. Don't expect to learn in one or two seasons; persevere, if you do lose valuable plants. To the florist all things are plain, but to the amateur it is not so easy. Many years I would not attempt to keep over winter the Begonia class; I now find them easier kept than many of the more common kinds. The secret of success with the Begonia is: in winter, uniform heat night and day, moisture and sunshine. The same for Heliotropes and Bouvardiss. In summer, I find the Rex family of Begonias show richer tints in partial shade, where only the early morning sun strikes them; also the Achi-menes, Lobelia, Fuchsia, and the variegated foliage plants, such as the Geraniums, Ivy, Elegantine, and others, the Farfugium, Gold and Silver Balm, Panicum, white and salmon colored blooming Zonales.

#### How to Care for the Lungs.

Selected by a Lady Correspondent for the American Farmer.

"There are in the lungs six hundred millions of minute air-cells, which if spread out would cover an area of cell surface of one hundred and thirty-two square feet. From three to five thousand gallons of air pass through the lungs daily. This, however, varies; a person laboring in the open air breathes more deeply than one confined to the house. Again, the capacity of the lungs modifies the quantity of air inhaled. And this capacity depends more upon the height of the individual than any other physical feature. If any one exceeds the average weight through corpulence, the capacity of the lungs decreases in a marked ratio. To secure the health of the lungs it is most important to keep every part of them in action. Pressure

of clothing or anything else that prevents complete filling of the lungs, is quite sure to induce disease. For if but a very few of the millions of air-cells are allowed to lie inactive or useless, nature will attempt their removal by means of the lymphatics, and this is often the beginning of serious disease .-Therefore it is a good practice for every one, and especially sedentary persons, several times each day to throw back and downwards the shoulders, and slowly fill the lungs to their utmost capacity, and then permit the air to escape slowly, because in this way every cell in the lungs will be used. The wearing of shawls, inasmuch as it requires a drawing forward of the shoulders, to make them thoroughly cover the body, compresses the lungs, and is highly injurious. Moreover, it makes a person round-shouldered, and thus gives the appearance of premature old age."—Hitch-cock's "Anatomy and Physiology." Ivison, Blakeman & Co., New York.

#### Home and its Queen.

There is probably not an unperverted man or woman living who does not feel that the sweetest consolations and best rewards of life are found in the loves and delights of home. There are very few who do not feel themselves indebted to the influences that clustered around their cradles for whatever good there may be in their characters and condition. Home, based upon Christian marriage, is so evident an institution of God, that a man must become profane before he can deny it. Wherever it is planted, there stands a bulwark of the state. Wherever it is pure and true to the Christian idea, there lives an institution conservative of all the nobler instincts of society.

Of this realm woman is the queen. It takes its cue and hue from her. If she is in the best sense womanly—if she is true and tender. loving and heroic, patient and self-devoted, she consciously and unconsciously organizes and puts in operation a set of influences that do more to mould the destiny of the nation than any man, uncrowned by power of elo-quence, can possibly effect. The men of the nation are what mothers make them, as a rule, and the voice that those men speak in the expression of power is the voice of the woman who bore and bred them. There can be no substitute for this. There is no other possible way in which the women of the nation can organize their influence and power that will tell so beneficially upon society and the State .- Scribner's Monthly.

#### Interesting Statistics.

The following statistics from Zell's Hand Atlas of the World, are selected for the Farmer by a lady correspondent:—

There are in the world one hundred millions of Protestants; two hundred millions of Roman Catholics; eighty millions of Greek and

other Churches; eight millions, three hundred and thirty-three thousand Jews; one hundred and sixty millions of Mohammedans; six hundred and sixty millions of Heathens. India, which has been called "the pearl of the British crown," has an area thirteen and a half times that of the British Isles; a population six and a half times as great—the combined popula-tion of the whole Western hemisphere, with that of Australia not equalling one-half that of India.

The population of Africa is supposed to be one hundred and eighty-five millions.

China proper, contains nearly one-third of the human race and is the most densely peopled region of the globe.

HASTE AND HEALTH.-It is not at all wholesome to be in a hurry. Locomotives have been reported to have moved a mile in three minutes for short distances. But locomotives have often come to grief by such rapidity. Multitudes in their haste to get rich are ruined every year. The men who do things maturely, deliberately, are the men who oftenest succeed in life. People who are habitually in a hurry generally have to do things twice over. The tortoise beats the hare at last.

Slow men seldom knock their brains out against a post. Foot races are injurious to the health, as are all competitive exercises; steady labor in the field is the best gymnasium in the world,-Dr. Hall.

### Baltimore Markets, May 22.

The quotations below are Wholesale Prices.

Breadsinffs.—Flour—Howard St. Super, \$4.75 ato choice do, \$7.00a7.50; do. Family, \$7.75a.25; do. common to fair Extra, \$6 25a6.75; do. good to choice do, \$7.00a7.50; do. Family, \$7.75a.9.25; Ohlo and Indiana Saper, \$4.75a5.75; do. common to fair extra, \$6.25a6.75; do. good to choice do., \$7.00a7.50; do. fow to medium extra, \$7.00a.80; do file Brands do., \$9 25a9.50; City fancy brands, \$10.50a11.00; Fine Flour, \$4.25a4.50; Rye Flour, \$4.75a5.25; Corn Meal, \$3.25a3.50. Breadstuffs.-Flour-Howard St. Super, \$4.75

33.25a.5.0.

Wheat—Market dull and prices lower. We quote good to prime Southern white, 170a180 cents; good to prime red do., 165a175 cents; choice amber do., 185a185 cents; do. amber good to prime, 150a155 cents; do. amber good to prime, 150a155 cents; do. amber good to prime, 160a170 cents.

Corm—Demand good for Southern. We quote white, 65a17 cents; yellow, 62a63 cents; Western white, dull, at 70 cents; yellow, 62a63 cents; mixed.

white, dull, at 70 cents; yellow, 69a63 cents; mixed, 60a62 cents.

Rye—Market dull. Western, 72a75 cents; Maryland, 70a80 cents.

Oats—Western, dull, at 40a46 cents for mixed, and 45a48 cents for bright; Southern, 46a50 cents.

Broom Corm—Common to fair, 3a4% cents; prime green, 6a6% cents, and choice long green hurl, 7% cents per lib.

Cattom—Market quiet, after considerable activity. We quote Middling, 30% cents; low middling, 19% a19% cents; good ordinary, 17%a18 cents; ordinary, 15%a16 cents

Hay and Straw—Market dull and prices lower.

15%ai6 cents

Hay and Straw—Market dull and prices lower.
Western and Penna., \$20a25; Cecil Co., \$28a00. Rye
Straw, \$30; Oat Straw, \$20a29 per ton.

Live Stock—Beef Cattle—Market very dull
and prices heavy. We quote best on sale, 6a7% cents;
generally rated first class, 5%a6 cents; medium
quality, 4%a5% cents; ordinary thin Steers, Oxen
and cows, 4a4% cents.

Hogs—Demand fair, but fully supplied. We quote
corn fed at 7a7% cents, and still fed, 6%a6% cents,
net.

Sheep—Fair to good, 4a5 cents; good to extra, 5 % cents, gross. Lambs, \$2 50a4.00 per head.

Sheep—Fair to good, 4a5 cents; good to extra, 5
a5½ cents, gross. Lambs, \$2 50a4.00 per head.

Mill Feed—City Mills Brown Stuff, 18a20 cents, and Middlings, 23a25 cents for light, and 25a40 cents for heavy, per bushel; Western Bran, \$14.00a15.00, and Ship stuff, \$15a18 per ton.

Molasses—Muscovado, 30a32 cents; Poto Rico, 22a50 cents; New Orleans, 80a85 cents.

Provisions—Bulk Shoulders, 7½ cents; Rib Sides, 8, 8a3½ cents; \$4 cents; Rib Sides, 8, 8a3½ cents; \$4 cents; Rib Sides, 9, cents; Clear Rib Sides, 9, cents; Clear Rib Sides, 10 cents. Hams, 14a16 cents; Lard, 8½ a9 cents. Mess Pork, \$11.25a17.50 per bbl.

Rice—Carolina, 8½ cents; Rangoon, 7½ cents.
Sa14—Fine, \$2.25a2.40, and Ground Alum, \$1.40a 1.45 per sack; Turks Island, 45a47 cents per pushel.

Nyrups—Maryland, 42a45 cents; Calvert, 40a50 cents; Baltimore, 45 cents; Canton Sugar House, 19 cents in hhds., and 22 cents in bbls.

Tobacco—Market for Maryland and Ohlo active, for Kentucky and Va. quiet. We quote Maryland frosted, \$4.00a5.00; sound to good, common, \$5.25a 700; good to fine brown, \$10a12.50. Viginia, common lugs, \$6.75a7.50; good lugs, \$8.00a5.25; common leaf, \$8.75a9.75; medium leaf, \$1.00a12.50.

Whiskey—Western, 94 cents.

leat, \$1.00a12.60.

Whiskey—Western, 94 cents.

Wool-We quote good unwashed, 30a34 cents; burry, 18a36 cents; long pulled, 38a40 cents; tub burry, 18a26 cents; washed, 44a49 cents.

#### NEW ADVERTISEMENTS.

A. B. Farquhar—Pennsylvania Agr. Works.
B. M. Rhodes & Co.—Orchilla Guano.
C. J. B. Mitchell—Cotswold Sheep.
Coe's Super-Phosphate of Lime.
H. P. Underhill—"Farmer's Favorite" Grain Drill.
Canfield, Bro. & Co.—Watches, Diamonds, &c.
J. G. Hewes—Am'd Bone Superphosphate of Lime.
Geo. W. Mowbray—Children's Carriages.
Baugh & Sons—Raw Bone Superphosphate of Lime.
American Farmer Office—Guernsey Cow for Sale.
S. E. Turner & Co.—Stationers, Dealers in Paper.
A. M. Herkness—Imported Jersey Cattle and Dogs.

#### S. E. TURNER & CO.. STATIONERS AND BLANK BOOK MANUFACTURERS.

Dealers in WRITING, PRINTING AND WRAPPING PAPERS, ENVELOPES, TWINES, BAGS, &c , &c. No. 3 S. Charles street,

july-ly

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# **Imported Jersey Cattle**

## DOGS.

ED. PHILLIP PARSONS FOWLER, of Jersey, England, who is the sole resident exporter, will sell at Auction, without reserve,

At HERKNESS' BAZAAR, PHILADELPHIA,

Immediately on their arrival,

A small herd of PRIME JERSEY HEIFERS and COWS and one BULL. Also, ten TER-RIER DOGS-shipped from Liverpool June 12th per steamer Artos, and expected about the 1st July.

Catalogues sent on application.

ALFRED M. HERKNESS. july-1t Auctioneer. 1873.

THE

1873.

# FARMERS' FAVORITE,

Or, SUPERIOR GRAIN DRILL;

BICKFORD & HUFFMAN, Manufacturers, Macedon, N.Y.

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# CHAMPION

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Seeding!

# FIELD TRIALS!

The only perfect "COMBINATION DRILL" in the World.

Certain in Distribution, accurate in Measurement of Seed used, and possessing more facilities and conveniences for adjustment to quantity, and practical operations in the field than any or all other Drills manufactured.

# The ONLY GRAIN DRILL with perfect Fertilizer or Phosphate Attachment,

Having a Double set of Distributors, which, without adding any weight, gives the Farmer **Two Drills in One. One** seeding Wheat, Rye or Buckwheat in large or small quantities. **The Other** seeding Oats, Barley, Cora, Peas, and other coarse grain with equal accuracy without clogging, skipping or breakage of seed.

The ONLY DRILL which throws out of gear by the automatic action of the Tube Lifter and covers all the seed distributed. Has the only really

### Practical, Durable Spring Tube in the market.

### Reversible Steel Points on Tubes, with a Tube Shifter,

To enable the farmer to change the tubes from a straight line to zigzag and back at will, without raising the Tubes or stopping the team.

WARRANTED TO PERFECTLY PERFORM THE SEEDING OF ALL GRAINS FROM FLAX TO CORN.

PLANTS CORN AND BEANS IN DRILLS FOR FIELD CROPS, WITH ENTIRE SUCCESS.

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Rich in Phosphates and Alkaline Salts.

From Orchilla Island in the Carribbean Sea, belonging to Venezuela, Lat. 11° 50' N., Lon. 66° 14' W.

Packed in Good Bags, 167 lbs. each, 12 to the Ton. \$30 per Ton, Cash.

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# COTSWOLD or COMBING WOOL SHEEP.

"A FINE SAMPLE OF COTSWOLD WOOL.—Mr. C. J. B. Mitchell, of Queenstown, Maryland, has sent us a lock of wool from his Cotswold Buck, which is one of the finest samples of the sort we remember to have ever seen. Mr. Mitchell writes us that the fleece from which this lock was taken weighed 18½ lbs., and some of the locks measured 17 inches in length. The one before us is very nearly that length, and is a remarkably beautiful specimen of the wool for the Cotswolds. Who can beat it?"—Maryland Farmer.

The premium for the best pen of Long Wool Enes was awarded to C. J. B. Mitchell at the Virginia State Fair held at Richmond in 1871.

PRICES FOR 1873.

Rams, 1 to 3 years old, from \$40 to \$75. Ewes, 1 to 4 years old, from \$20 to \$50.

Parties ordering more than one sheep will be allowed a deduction on above prices. A charge of one dollar each will be made for all sheep boxed for delivery. C. J. B. MITCHELL.

july-3t

QUEENSTOWN, Queen Anne's Co., Md.

# COE'S SUPER-PHOSPHATE OF LIME.

LETTER FROM BASIL S. BENSON, ESQ.

ANNE ARUNDEL Co., MD., March 22d, 1873.

MR. ANDREW COE, Baltimore, Md.

DEAR SIR:—The fifteen tons of Coe's Phosphate I bought of you last season I used on Corn, Potatoes, Cabbage and Grass; it gave perfect satisfaction on all, and produced better crops than barn-yard manure. I can cheerfully recommend it to the farming community. I shall want from fifteen to twenty tons this season.

july-1t

BASIL S. BENSON.



# PENNSYLVANIA Agricultural Works,

YORK, Pa.

### A. B. FARQUHAR,

MANAGER AND PROPRIETOR.

The Pennsylvania Agricultural Works is one of the most extensive establishments of its kind in the United States. It is furnished with improved Machinery, Foundry, Forging Rooms, Planing and Sawing Mills, Lumber Yard, &c., complete within itself. It is situated among the great Iron, Coal and Lumber fields, which form the basis of all manufacturing; and I would respectfully call the attention of the public to these advantages, confident of meriting an extended patronage.

The following are among the specialties:

### AGRICULTURAL STEELS, PLOWS, CULTIVATORS, HORSE RAKES, PLOW HANDLES, THRESHING MACHINES, HORSE POWERS. &c.

### HORSE POWERS.

The Horse Power is one of the most important implements, and probably the most difficult to keep in order; too much care, therefore, cannot be used in selecting the very best.

I have long made the manufacture of Horse Powers a specialty, and can safely recommend my improved Iron Geared Powers to be all that I claim for them.

### FARQUHAR'S CLIMAX HORSE POWER,

For Threshing, Ginning and General Farm Use,

ranks first; being the result of many years' labor, "practice with science," and the expendi-

ture of thousands of dollars in experimenting.

It is remarkable for its light draft, simplicity, great strength and durability. It is fitted up with as much care as a piece of cotton machinery or steam engine, and will last as long. The rule, the "best is the cheapest," applies with special force to Horse Powers.

### THE PELTON OR TRIPLE GEARED IRON POWER.

This well known power is noted for its strength, cheapness and general efficiency. Like the Climax, the gearing is all secured in an iron frame, and is uninjured by the weather. The pinions are made of chilled iron, and no pains are spared to make it a first-class, cheap power.





### Improved Railway Horse Powers, Threshers and Separators,

Have been a specialty with me for many years, and those who favor me with their orders may rely upon getting a machine which will run as light, waste less grain, and give more general satisfaction than any offered.

#### PLOW HANDLES.

Having improved Blanchard machinery for the manufacture of Plow Handles upon an extensive scale, I can supply first quality Handles, side bent to order for any pattern of plow. For further particulars, address A. B. FARQUHAR, York, Pa.

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PREMIUMS FOR AGRICULTURAL FAIRS FURNISHED.
BADGES AND MEDALS FOR COLLEGES AND SCHOOLS A SPECIALTY.

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Ammoniated Bone Super-Phosphate of Lime,

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IMPORTANT IMPROVEMENT IN FERTILIZERS.

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Imported directly from the mines, high and low tests.

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STOCK ON HAND FOR SALE VERY CHEAP.

Muriate of Potash, Kainit, &c.

Please call for circulars.

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This article has been in constant use for eighteen years past, and as an ACTIVE AND PERMANENT MANURE may be relied upon by farmers for all crops. Also

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GUARANTEED PURE, and

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These brands of Ground Bones are sold under a special guaranty of absolute purity.

A full line of supplies for parties making their own Phosphates.

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We have constantly on hand a No. 1 GUANAPE PERU-VIAN GUANO, which we offer for sale in lots to suit purchasers, at Agents' Warehouse at Point or uptown.

### Bone Dust and Bone Flour,

which, by analysis, is the best bone offer d for sale in this market.

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Give us a call before purchasing.

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FIELD SEED of best quality always on hand. feb-1y

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Giving full and simple directions for making money rapidly with Bees.
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2 Thoroughbred Ayrshire Cows.

do. - Devon Cows, bought of Col W. W. W Bowie

1 Thoroughbred Devon Bull, bought of Gov. Bowie.
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20 full bloed South Down Ewes, from 1 to 4 years old 10 Ram Lambs

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Our arrangements made in person with the leading manufacturers in Europe and this country, and having resident agents in France and England, give us every advantage in obtaining our supplies; manufacturing the common class of goods, such as

TIN AND JAPANNED WARE;

Buying entirely for cash; with a thorough knowledge of the business in all its details; purchasers may rest assured that we can and will supply their wants as favorably and upon as good terms as any house in New York or elsewhere.

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We respectfully solicit a visit and an examination of goods and prices.

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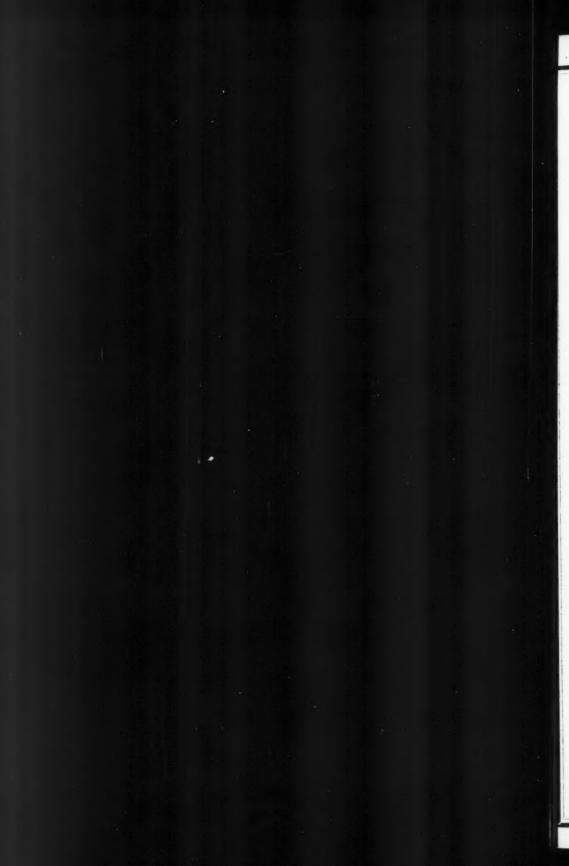
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